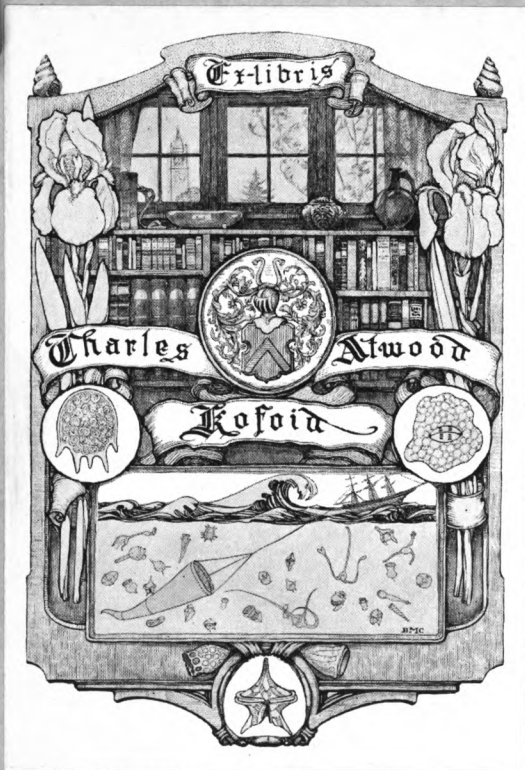

This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

Google™ books

<http://books.google.com>





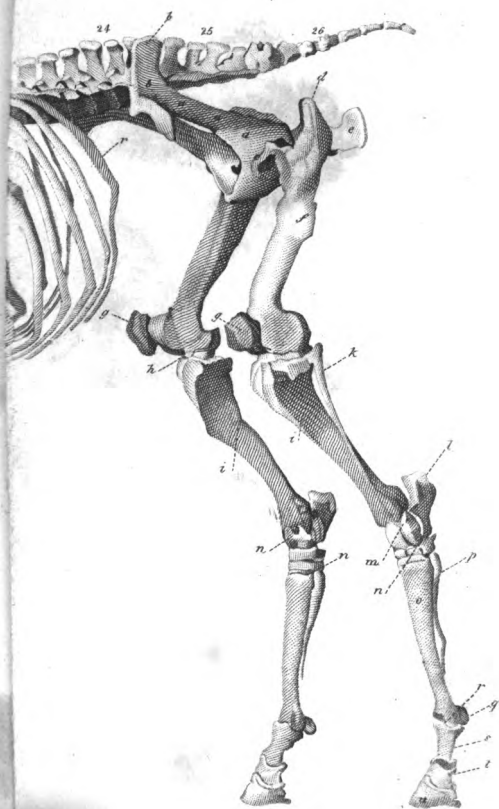
P. Williams



THE LIBRARY
OF
THE UNIVERSITY
OF CALIFORNIA

PRESENTED BY
PROF. CHARLES A. KOFOID AND
MRS. PRUDENCE W. KOFOID

Frontispiece.



Engraved by J. Shury

A
COMPENDIOUS DICTIONARY
OF THE
VETERINARY ART:

CONTAINING
CONCISE EXPLANATIONS OF THE VARIOUS TERMS USED IN
VETERINARY MEDICINE AND SURGERY:

ALSO,
A SHORT DESCRIPTION
OF
THE ANATOMY OR STRUCTURE OF THE EYE,
THE FOOT,
AND OTHER IMPORTANT PARTS OF THE HORSE.

WITH
PRACTICAL OBSERVATIONS ON HIS DISEASES,
AS WELL AS THOSE OF OTHER DOMESTIC ANIMALS.

BY JAMES WHITE,
AUTHOR OF A TREATISE ON VETERINARY MEDICINE.

WITH A FRONTISPIECE.

THE SECOND EDITION, GREATLY ENLARGED.

LONDON:

PRINTED FOR LONGMAN, REES, ORME, BROWN, AND GREEN;
BALDWIN AND CRADOCK; J. BOOKER; WHITTAKER, TREACHER,
AND CO.; T. TEGG; SIMPKIN AND MARSHALL;
HURST, CHANCE, AND CO.; AND W. JOY.

1830

Don An

LONDON:
PRINTED BY THOMAS DAVISON, WHITEFRIARS.

K-SF6-1
W5
1830
Biol.
Lib

TO
SAMUEL WHITE, ESQ.
THIS
DICTIONARY
IS DEDICATED,
BY HIS
AFFECTIONATE BROTHER,
THE AUTHOR.

M353600

NOTICE.

For a full explanation of the Frontispiece, see the end of the volume.

A

DICTIONARY

OF THE

VETERINARY ART.

A, a. EITHER one or both of these letters are used in medical prescriptions as an abridgment of the word *ana*, which signifies *of each*. This abbreviation is generally written thus, *ā ā*.

ABATE. A term in horsemanship. A horse is said to abate or take down his curvets, when, while working upon curvets, he puts both his hind feet to the ground at the same moment, and observes the same regularity in all the times.

ABDOMEN. From the Latin verb *abdo*, to hide. That part of an animal usually denominated the belly. This cavity contains the intestines or bowels, liver, &c. and is separated from the *thorax* or chest by a large muscle named *diaphragm*, *midriff*, or *skirt*. Wounds of the abdomen are not very often met with in horses and cattle, but, when they do occur, are always dangerous, and not unfrequently fatal, from the high degree of inflammation consequent upon them, and the importance of the organs contained within the abdominal parietes.

ABORTION. Miscarriage; slipping or slinking foal or calf; warping. In mares, miscarriage is very generally caused by over-exertion during the latter period of gestation. It is not unfrequently brought about by accidents at grass; such as falling into a ditch or pit, and struggling violently to extricate themselves. Kicks on the belly are by no means an uncommon cause of miscarriage; for which reason a mare, when near her time, should always be kept by herself in a loose box or well-littered yard. After foaling, she will require six weeks' rest, in order to recover from the effects of parturition,

B

ABORTION.

and attend to her offspring until it gain strength sufficient to follow the dam, if necessary; and, when first brought into work again, the services required of her should be very slight, otherwise her milk may be deteriorated, and her foal consequently fall off in condition. Hard keep and exposure to wet and cold sometimes occasion miscarriage, as do high feeding and want of exercise. Abortion is of more frequent occurrence in sheep than in mares, and is caused by fright, over-driving, being worried by dogs or other animals, and by being kept in cold and damp situations, and on improper or insufficient food. I have known ewes that were scantily supplied with nourishment for some time previous to the yeaning or lambing season, bring forth lambs that were more or less paralytic in their hind parts: some were utterly incapable of motion; others, again, dragged themselves along with extreme difficulty. Cows are particularly liable to the accident of warping, or slinking calf; and several investigations have been made, in order to ascertain the reason of its prevalence among them. A very excellent paper on this subject (*De l'Avortement dans les Femelles des Animaux domestiques*) has appeared in a French work entitled *Instructions et Observations sur les Maladies des Animaux domestiques*, by M. M. Chabert, Flandrin et Huzard; and which likewise contains many important reports and remarks on abortion by several veterinary surgeons in different parts of France. After having carefully perused this treatise, and reflected upon all the circumstances that have taken place under my own observation, I am decidedly of opinion, that the most common cause of abortion in cows is improper feeding during the winter and spring, before they are turned to pasture. The filthy pond-water they are often compelled to drink, and feeding on the rank fog-grass of October and November, especially when covered with hoar frost, are likewise frequent causes of miscarriage. I remember a farm near Berkeley, in Gloucestershire, which afforded a striking proof of the injurious effects of stagnant pond-water impregnated with dung and urine. This farm had been given up by three farmers successively, in consequence of the losses they sustained through abortion

ABORTION.

in their cattle, their not being in season (*i. e.* not conceiving), red water, and other diseases. At length a Mr. Dimmery, after suffering considerably in his live stock for the first five years, suspected that the water of his ponds, which was extremely filthy, might be the cause of the mischief: he therefore dug three wells upon his farm, and having fenced round the ponds to prevent his cattle from drinking there, caused them to be supplied with the well-water in stone troughs erected for the purpose; and from this moment his live stock began to thrive, became uncommonly healthy, and the quality of the butter and cheese made on his farm was greatly improved. It should be observed, that on this farm the cattle were regularly fed with good hay during the winter, and kept in good pasture in summer, so that there cannot exist a doubt that the losses sustained by Mr. Dimmery were entirely attributable to the unwholesome water the animals were compelled to drink. In order to show that the accident of warping may arise from a vitiated state of the digestive organs, I shall here notice a few circumstances tending to corroborate this opinion. In January, 1782, all the cows in the possession of Farmer D'Euruse, near Grandvilliers in Picardy, miscarried. The period at which they warped was about the fourth or fifth month. The accident was attributed to the excessive heat of the preceding summer; but as the water they were in the habit of drinking was extremely bad, and they had been kept upon oat, wheat, and rye straw, it appears to me more probable, that the great quantity of straw they were obliged to eat, in order to obtain sufficient nourishment, and the injury sustained by the third stomach in expressing the fluid parts of the masticated or ruminated mass, together with the large quantity of water they probably drank while kept upon this dry food, was the real cause of their miscarrying. (See *White on Cattle Medicine. Structure and Economy of the Digestive System of the Cow.*) A farmer at Charentin, out of a dairy of twenty-eight cows, had sixteen slip calf at different periods of gestation. The summer had been very dry, and, during the whole of this season, they had been pastured in a muddy place which was flooded by the Seine. Here the cows were generally up

ABORTION.

to their knees in mud and water, and feeding on ranunculus, crowfoot, rushes, &c. Part of this dairy had recently been brought from Lower Normandy, where they had all been affected with indigestion (that is to say, *hoven*, *blown*, or *blasted*, which see) by feeding upon lucerne, from the effects of which they had been relieved by the operation of paunching. In one, the opening made was large enough to admit the hand, for the purpose of drawing out the food; the rest were operated on with a trocar. (See *White on Cattle Medicine*, chap. ii. *Diseases of the Digestive Organs*.) In 1789, all the cows in the parish of Beaulieu, near Mantes, miscarried. All the land in this parish was so stiff as to hold water for a considerable time; and as a vast quantity of rain fell that year, the pastures were for a long time, and at several periods, completely inundated, on which account the grass became sour and rank. These and several other circumstances which have fallen under my own observation plainly show, that keeping cows on food that is deficient in nutrition and difficult of digestion, is one, if not the principal, cause of their miscarriage. It is stated by M. Flandrin, that feeding in pastures when covered with white frost has been observed to occasion abortion in these animals, and dairy-men are universally of opinion, that the sight of a slipped calf, and the smell of blood, or any putrid animal substance, is apt to conduce to warping. For this reason it is always proper, when a cow has slunk her calf, to bury the abortion pretty deep, to separate her from the rest of the herd, and to take care that, wherever any blood or other animal matter may have fallen, the spot be well cleansed, lest the accident be communicated to other cows. Upon the whole, I am of opinion, that the cause of miscarriage may generally be traced to improper feeding and unwholesome water. By improper feeding, I mean keeping animals on bad hay or straw, rank autumnal grass after much rain, especially in low open places, and near rivers, where the night air, always more cold and damp than in more elevated situations, has a depressing influence upon the body, and more particularly upon the digestive organs. Cows are frequently blown or blasted by feeding too freely upon mangel-wurzel, tares, lucerne, &c.

ABORTION.

especially if eaten while wet with dew or rain, and this food, given in too great abundance, when not followed by acute indigestion, almost always gradually produces a vitiated and weakened state of the digestive organs, or some more serious consequences.

The most usual symptoms which precede abortion are, a sudden filling of the udder, and a loose, flabby, and sometimes swollen appearance of the genitals, which discharge a little red-coloured fluid. Cows in good condition are most liable to abortion; and it is well known that milk-fever, or inflammation of the womb, (a disease frequently fatal to these animals), seldom attacks such as are rather lean at the time of calving. Those cows that have once slunk their calves are generally subject to miscarriage at a future period; and their liability to this accident increases in proportion to the frequency of its occurrence. Cows are in general more apt to slip their calves at the latter end of the year than at any other period. When, added to the symptoms already described, a cow appears languid, shows signs of pain and uneasiness, appears indifferent to food, chewing the cud with difficulty, or not chewing it at all, an opening drench, composed of half a pound of Epsom salts, three or four drams of aloës in powder, or as many ounces of castor oil, may be administered in a quart or three pints of warm gruel. In many cases, bleeding is absolutely necessary; especially if the horns be hot, the nose dry, the breathing laborious, and the pulse hard. In all such cases, not less than from four to six quarts of blood should be drawn, according to the strength of the animal; but should these means fail, and abortion eventually take place, it will be necessary to keep the cow by herself in some warm sheltered place; and if she have not cleansed, that is, if the after-birth have not passed off, no medicine whatever should be given in order to hasten its removal, as all the drenches usually prescribed for this purpose are always useless, and generally injurious. This treatment is equally applicable to mares. On the appearance of those symptoms indicating approaching abortion, the cow should immediately be taken to some spot where she can neither be heard nor seen by the rest of the herd. All carrion and putrid matter of every

ABSCESS.

description should be carefully removed from pastures in which pregnant cows are kept.

ABSCESS. A tumor containing *pus* or matter. When inflammation arrives at a certain height, it generally terminates in suppuration. An abscess is very frequently the consequence of a bruise, or other external injury: sometimes, however, it arises from other causes, as in strangles. The swelling, at first hard and painful to the touch, gradually becomes soft and elastic, yielding to the pressure of the finger, but immediately recovering its former shape on such pressure being removed: it is then said to be ripe, and may be opened with a lancet, or any other convenient instrument, when a thick whitish-coloured fluid, of the consistence of cream, is discharged. When the extent of the cavity has been ascertained, by means of the finger or a probe, the whole is to be laid open, by which method all the pus will freely escape; the wound will only require to be washed twice a day with warm water; under which treatment it will soon get well without further trouble: but if, according to the common mode of treatment, only a small opening be made, it will be necessary to squeeze out the pus at every dressing; which, inflaming and irritating the sore, frequently causes a fresh collection of pus, or forces the confined matter to burrow under the neighbouring parts, so as to form sinuses or pipes; thus protracting the cure, and increasing the difficulties of the case. Warm emollient poultices are the best applications for hastening the process of suppuration, and, where these cannot be used, warm fomentations are the most beneficial. In general, it is better not to open an abscess too early, or before the whole of it has become soft. When sinuses or pipes are formed (see *Fistula*), they should be completely laid open with a knife, and dressed with a solution of blue vitriol, or some other stimulant application, until the sore assume a healthy appearance. Abscesses of internal parts, as the lungs, liver, &c., are mostly fatal; but little benefit is generally derived from medicines in these cases. (See *Poultice*, *Fomentation*, *Tumors*, *Strangles*, *Vives*, *Fistula*, *Poll-evil*, and *Ulcers*.) Abscesses are sometimes said to be critical, when a consequence of fever, or some other

ABS—ACE

general indisposition; and in such cases have been considered beneficial.

ABSORBENTS. Medicines that absorb or neutralize acidity in the stomach or bowels. Such are chalk, magnesia, calcined oyster-shells, bole, and other earths that readily absorb fluids. The alkalies, potash, soda, and ammonia, are likewise absorbents. (See vol. ii. of *White's Farriery*, or *Materia Medica* and *Pharmacopœia*.) In cases where horses are observed to have a depraved appetite—devouring their litter, licking the walls, and eating any dirt that comes in their way—absorbent medicines are recommended; but as the acidity they are intended to correct is generally dependent upon a morbid state of the stomach and *primæ viæ*, arising from improper feeding, the relief they afford is only temporary. See vol. iii. and iv. of *White's Farriery*; and *White on Cattle Medicine*, art. *Meadow-sickness*.

ABSORBENT VESSELS. Small, delicate, and transparent vessels, supposed to exist in every part of the body. Their office is to absorb or take up fluids from the surface or cavities of the body. They are divided into lymphatics and lacteals; the latter of which are to be found in the intestines, and convey the chyle, or nutritious parts which they receive from the digested food, into the thoracic duct. See *Lacteals* and *Lymphatics*.

ABSTERGENTS. Medicines that cleanse the skin or sores.

ACACIA CATECHU. The plant from which catechu, formerly called Japan-earth (*terra Japonica*), is made. See *Catechu*.

ACACIA VERA. The tree that yields gum arabic. See *Gums*.

ACCLOYED. An old term for an injury sustained in shoeing, from the nail having been improperly driven.

ACETABULUM. The socket in which the head of the femur or thigh-bone is lodged.

ACETATES. Salts are thus named which are formed by the combination of acetous or acetic acid (vinegar) with alkalies, earths, or metals. The acetates principally used in veterinary medicine are, acetate of ammonia, acetate of copper, acetate of zinc, and acetate of lead. See vol. ii. of *White's Farriery*.

ACE—ADD

ACETIC or **ACETOUS ACID.** See *Vinegar*.

ACIDS. Acids are distinguished by their sour taste, and by their turning vegetable blues red. They combine readily with alkalies, earths, and metallic oxides, and are divided into mineral, vegetable, and animal acids. The sulphuric, nitric or nitrous, fluoric, and muriatic, are the principal mineral acids. The first was formerly named oil of vitriol, or vitriolic acid; the second, strong spirit of nitre, or aqua fortis; and the last, spirit of salt. Muriatic acid is now denominated (according to Sir Humphry Davy's analysis of it) hydrochlorine. The principal vegetable acids are, the acetous, or vinegar; the tartaric; the citric, or acid of lemons; the malic, or acid of apples; and the oxalic, or acid of sorrel. The chief animal acids are, the phosphoric, the uric or lithic, and the prussic or hydrocyanic. The acids used in veterinary medicine are noticed under their respective names. See *Sulphuric Acid*, &c. Also vol. ii. of *White's Farriery*.

ACONITE. Wolfsbane. See vol. ii. of *White's Farriery*.

ACOPUM or **ACOPON.** A remedy for weariness, said to have been used by Hippocrates. It is a strange farrago, consisting of about thirty ingredients, among which pigeons' dung makes a conspicuous figure.

ACTION. The paces of a horse. These chiefly depend upon his natural powers and disposition, but may be greatly improved by judicious biting and riding. See *Paces*, *Biting*, and *Riding*.

ACTUAL CAUTERY. Red-hot iron. See *Firing*.

ACUTE. A term applied to those diseases which attack with violence, and run through their course in a short time. It is opposed to *chronic* or lingering diseases, in which those at first of the acute kind are apt to terminate. See *Chronic*.

ADDER-STUNG. This term, Mr. Taplin observes in his *Sporting Dictionary*, has been indiscriminately applied to the bites and stings of venomous animals and insects, without distinction; and this probably arose from the frequent discovery of such accidents, without being able to ascertain the cause, or from what enemy the injury was sustained. Horses, as well as dogs, he says, are sometimes bitten by the viper (called

ADE—ÆTH

an adder), slow-worm, or eft; but much more frequently stung by hornets, wasps, a large, gold-coloured, long-bodied, glittering fly, called a horse-stinger, or other poisonous insects which abound, during the summer months, in the sunny banks of pastures. In all injuries of this kind, he thinks copious bleeding should precede every other consideration; and considers the old and popular practice of applying unctuous compositions much less effectual than fomentations of warm vinegar, an aqueous solution of sal ammoniac, or a solution of sugar of lead in water, with the addition of a little camphorated spirit, giving, at the same time, small doses of nitre and gum arabic. However, it is certain that dogs, after having been bitten by vipers, so as to cause the whole body to swell to an enormous size, have been cured by applying salad oil to the injured part, and administering the same remedy internally.

ADENOLOGY. That branch of anatomy which treats of the glands. See *Glands*.

ADHESIVE INFLAMMATION. See *Inflammation*.

ÆGYPTIACUM. (*Linimentum Æruginis*.) A preparation of verdigris, vinegar, and honey. It is composed of five ounces of powdered verdigris, one pound of honey, and seven ounces of vinegar. The whole of these ingredients are to be boiled together until they become of a deep red colour, and of the consistence of honey. This is a good remedy for thrushes or diseased frogs.

ÆRUGO. (*Subacetas Cupri*.) Verdigris. This is a medicine that enters into the composition of several detergent ointments. Prepared verdigris is frequently used as an escharotic. See vol. ii. of *White's Farriery*.

ÆTHER, or ETHER. Sulphuric æther is a very powerful stimulant and antispasmodic. It is extremely volatile, and must therefore be quickly administered, otherwise a great portion of it will be lost by evaporation. It has been prescribed in flatulent colic, but must be given with caution. The dose is from half an ounce to an ounce. See vol. i. of *White's Farriery*, chap. xiv; also vol. ii., or *Pharmacopœia*, &c.

ÆTHIOPS MINERAL. A preparation of quicksilver and flower of sulphur. See vol. ii. of *White's Farriery*.

AGA—AGE

AGARIC. A fungous substance growing upon the oak, and formerly much extolled for its efficacy in stopping bleeding. See *Hæmorrhage* and *Styptics*.

AGE. The age of a horse may be known by certain marks in the front teeth and tusks of the under jaw, until he be eight years old; after which period there are no certain signs for ascertaining his exact age, although many circumstances may tend to show whether he be very old or not. The number of a horse's teeth is forty; twenty-four grinders, and sixteen others, by some of which his age may in general be known up to a certain period. Mares have only thirty-six teeth, as in them the tusks, or tushes, are usually wanting. A few days after a colt is foaled, he puts forth two small front teeth in the upper and under jaw, and soon after two more: these are called pincers, or nippers. The next four which make their appearance are denominated separators. The four corner teeth, as they are termed, come last, and are generally not cut until some months after the pincers. These twelve teeth in the front of the mouth are small and white, and continue without any alteration until the colt is two years and a half old, when he begins to shed them. The two teeth that first made their appearance are the first that are lost, and are replaced by two others, called horse's teeth, considerably stronger and larger than those that have made way for them. Between the third and fourth year, the two colt's teeth next to them fall out, and are, in like manner, replaced by horse's teeth; between the fourth and fifth year the corner teeth are changed, the tushes make their appearance, and at the expiration of the fourth year the whole of the teeth are in general perfectly formed, and the horse is said to have a full mouth. After this period, up to the eighth year, the age of a horse may be known by the cavities in the corner teeth, which at first are deep, but are gradually filled up more and more every year, until they entirely disappear: this commonly happens at the end of the seventh year. After the fifth year, the above criterion of age may be corroborated by the grooves in the inside of the tushes; these are two in number: at six, one of these cavities, namely, the one next the

AIR—ALG

grinder, disappears; at seven, the other is considerably diminished, and at eight is, in most cases, but not always, entirely gone. After this period the tush becomes gradually more blunt and round. The marks in the upper teeth are by some considered indicative of a horse's age; those in the two front teeth disappearing at eight, in the two next at ten, and in the corner teeth at twelve years of age: but these appearances are not always to be relied on. As a horse gets old, he generally turns more or less gray; the cavities above the eyes become deeper; the under lip falls; and the gums shrink away from the teeth, giving them the appearance of greater length. (See vol. i. of *White's Farriery*.) It is a common practice with horse-dealers both to burn marks in a horse's teeth, which is called *bishoping* (see *Bishoping*), and to puncture the skin of the cavity over the eyes, for the purpose of inserting a quill or other tube, and filling the cellular membrane with air, in the same manner as veal is inflated by butchers. This gives a horse the appearance of being younger than he really is, and is a deception that is very frequently resorted to.

AIR. See *Stable Management*; and chap. i. of *White's Farriery*.

ALCOHOL. Rectified spirit of wine. This is extensively used in medicine for making tinctures. With an equal quantity of water, it forms proof spirit, which, combined with some spices and bitters, is frequently administered to horses as a cordial or carminative. See vol. ii. of *White's Farriery*.

ALE. Good ale is an excellent cordial for horses or cattle, either alone, or mixed with ginger or other spices. Horses will soon become fond of ale, and it may be given them with advantage after great fatigue. Its use has frequently been abused by cattle doctors, who are very much in the habit of making it a vehicle for every sort of medicine, whatever may be the disorder they have to contend with. Of course it should never be used in cases of internal inflammation. See *Cordials*.

ALEXIPHARMICS. Medicines that are supposed to destroy poisons in the body.

ALGAROTH. An alterative powder. The dose is one dram.

ALI—ALT

ALIMENT. See *Diet*. Also vol. i. of *White's Farriery*, art. *Feeding and Food*.

ALIMENTARY CANAL. See *Intestines*.

ALKALIES. Alkalies are of three sorts; the vegetable, mineral, and volatile. The first is named *potash*, the second *soda*, and the third *ammonia*. The two first are called *fixed alkalies*, and the last *volatile alkali*. Alkalies render oils miscible with water, change blue vegetable colours to green, and, when combined with acids, which they neutralize, form what are called neutral salts. See vol. ii. of *White's Farriery*.

ALLSPICE. Pimento. Jamaica pepper. This is an excellent cordial and carminative for horses and cattle. The dose is from two to four drams, according to circumstances. See *Cordials* and *Carminatives*.

ALOE. A plant from which the purging gum of the same name is obtained.

ALOËS. The inspissated juice of the aloe plant. There are three sorts of aloës; the Soccotrine, the Barbadoes, and the Cape: of these the second is the only one to be depended on in cattle medicine, as the others are seldom to be obtained but in an adulterated state. Pure Barbadoes aloës are of a dark brown colour, present a rough surface when broken, and have a strong disagreeable smell. It may be given in doses of from five to eight drams: for cows, from four to six drams, mixed with some common salt or Epsom salt, will be found sufficient. See vol. ii. of *White's Farriery*.

ALTERATIVES. A class of medicines which act very gradually upon the system, by slightly increasing the natural secretions of the body: such, for instance, are the different preparations of mercury, antimony, nitre, &c., when given in small doses. They may be classed under the three heads of *diaphoretics*, which act upon the skin; *diuretics*, which increase the secretion of urine by exciting the action of the kidneys; and *laxatives*, or those medicines which have a gently stimulating effect upon the bowels. See vol. ii. of *White's Farriery*.

ALTHÆA. Marsh-mallows. This plant is generally used in the formation of emollient drinks, as it contains a great quantity of mucilage. It is principally serviceable in irritation of the bladder.

ALU—AMM

ALUM. A mineral salt, possessed of very considerable astringent powers. It is used inwardly, in doses of half an ounce or an ounce, in all affections which require powerful astringent remedies. When deprived of its water of crystallization by caloric, it becomes easily pulverizable, and in this state is occasionally sprinkled on ill-conditioned ulcers. It has been recommended as an antidote to the poisons of lead. (See vol. ii. of *White's Farriery*.) Roman or rock alum differs from common alum only in being of a reddish colour, or rather covered with a reddish powder.

ALUMINE, or ALUMINA. Argillaceous earth: the base of alum, or pure clay.

AMAUROSIS. *Gutta serena.* A disease of the retina and optic nerve, generally causing total blindness, without any perceptible alteration in the appearance of the eye. It is known by passing the hand before the eye, or by the horse not avoiding objects when left to himself. See *Eye*. Also vols. i. and iii. of *White's Farriery*.

AMBER. *Succinum.* A bituminous substance, from which an essential oil and salt are obtained. The former has been much employed in the composition of strain oils, as they are termed by grooms and farriers. When rectified, it has been prescribed in flatulent colic as an antispasmodic, in doses of from half an ounce to an ounce. The salt of amber is also supposed to possess some antispasmodic qualities. However, more efficacious remedies than these may very easily be found, both for strains and colic. See *Strains* and *Colic*.

AMBURY. See *Anbury*.

AMMONIA. Carbonate of ammonia; volatile alkali; prepared ammonia; volatile salts, or salts of hartshorn. This is a powerful stimulant. Strictly speaking, pure ammonia exists only in the form of gas, but is capable of combining with water, which, when saturated with it, is termed *liquor*, *water* or *solution of pure ammonia*, or *strong spirit of sal ammoniac*, and is principally used, when mixed with sweet oil, or oil of turpentine, as an external application to indolent swellings, and in some cases of strains and bruises. The *liquor ammoniæ*, when applied alone, is capable of blistering the skin. The

AMM—ANB

muriate of ammonia, or *sal ammoniac*, is a neutral salt composed of ammonia and muriatic acid. It is seldom given internally, but, when dissolved in vinegar, has been found efficacious in strains and bruises. See vol. ii. of *White's Farriery*.

AMMONIACUM, GUM. This has been prescribed with great advantage in chronic cough; generally combined with squills, ginger, and soap; sometimes also with camphor, opium, and other antispasmodics. It is classed among expectorants, and its dose is from two to four drams. The purest kind is called *drop ammoniacum*. See vol. ii. of *White's Farriery*.

AMYLUM. Starch. This is sometimes used in the composition of astringent clysters.

ANASARCA. That form of dropsy which affects the whole, or nearly the whole, of the body. See *Dropsy*; and vol. i. of *White's Farriery*.

ANASTOMOSIS. The communication of blood-vessels with each other, or their opening one into another; by which means, when the passage of the blood through any artery or vein is prevented by ligature, compression, or any other cause, the circulation is still kept up by means of the anastomosing vessels.

ANATOMY. The art of dissecting the several parts of the animal structure, in order to learn its conformation, the relative situation of its parts, with the appearances they present. When practised upon animals, it is generally termed *comparative anatomy*.

ANBURY. A soft spongy tumor, sometimes met with in horses and cows. They are of various sizes: sometimes less than a mulberry, which they often resemble in colour; at others as large as a middling-sized apple. They generally appear about the nose, but are not unfrequently met with in other parts of the body. When wounded, they bleed freely; for which reason farriers in general destroy them by escharotic applications, such as a solution of blue vitriol, or some stronger preparation. However, the knife would probably be found the best and speediest mode of removing them. Mr. Taplin recommends that they should be carefully moistened, once in three or four days, with the butter of antimony, which he says will effectually cure them. When these tumors

ANC—ANE

are small and numerous, or if they have a wide base, the following application may be safely used, and has been frequently found efficacious :

Powdered alum, two ounces.

Water, one pint.

Sulphuric acid, one dram. Mix.

Should the tumor be attached to the body by a slender neck, or pedicle, it may safely be cut off; and if any vessel should bleed profusely (a circumstance I have never known), the actual cautery may be applied to arrest the hæmorrhage. After the anbury has been removed, the part should be touched with lunar caustic for three or four days, to prevent its growing a second time.

ANCHYLOSIS. A stiff joint, arising from the intimate union of those bones which formed the joint. Anchylosis is distinguished as *true* and *false*: in the former, the bones have grown together so completely, as not to admit of the slightest motion taking place between them; while in the latter their motion is only diminished, not destroyed. Anchylosis in horses is not unfrequently a consequence of wounds or bruises, which, causing violent inflammation of the joint, occasions an absorption of the interarticular cartilages, and an ossific action in the arteries which nourish the joint, by which means bone is generated in lieu of cartilage, and anchylosis is the result. The remedies, or rather the palliatives, where the disease has not proceeded too far, are firing and blistering. In bad spavins and ring-bones, there is generally anchylosis of the hock and pastern joints. See *Wounds of Joints, Bruises, Spavin, and Ringbone*.

ANEURISM. A pulsating tumor, caused by a preternatural dilatation of the coats of an artery, or by a rupture or wound of its coats, by which blood is effused into the neighbouring parts. A third species of aneurism has been recognised by some anatomists, which is caused by a protrusion of the inner through the external coat of an artery; but this, if it exist, being a very rare occurrence, is not generally admitted to take place. The first of these aneurisms is denominated *true*, the second *false*, and the third *internal mixed aneurism*, or *aneurisma herniam arteriæ sistens*. The great me-

ANG—ANO

senteric artery of the horse and ass is frequently affected with this disease; and on laying it open is generally found to contain small worms like ascarides. The general mode of curing aneurism is by ligature, which, causing an inflammation of the coats of the artery, occasions an obliteration of its tube, and the circulation of the blood is carried on by the anastomosing vessels. If left to itself, the aneurism generally bursts; and if it be large, the patient bleeds to death, unless the hæmorrhage be arrested in time. Some aneurisms have been known to undergo certain natural changes by which they have been spontaneously cured, but the instances of this occurrence are extremely rare. The swelling of an aneurism is distinguished from other tumors by the pulsations transmitted to it by the artery, and which are synchronous with the beating of the heart. However, although aneurisms are pulsating tumors, it by no means follows that every pulsating tumor is an aneurism; as any swelling lying directly over a large artery may have the same motion communicated to it by the impulse of the artery, as is felt in aneurism. The disease is not very general in horses and cattle.

ANGUSTURA BARK. A tonic medicine. See vol. ii. of *White's Farriery*.

ANIMAL OIL. An empyreumatic and very fetid oil, obtained by distillation from bones. It is said to possess antispasmodic and anthelmintic qualities.

ANISE-SEED. A mild carminative and cordial. It is much used in veterinary practice, and is generally an ingredient in cordial balls. The dose is about an ounce. An essential oil is obtained from it by distillation, in which the virtues of the seeds are concentrated. One pound of the seeds will yield about two drams of oil, which is generally in a congealed state, except in very warm weather.

ANODYNES. Medicines which alleviate pain by diminishing the irritability of the nervous system. The medicine principally relied upon for this purpose, in veterinary practice, is opium; although several others, such as hemlock, deadly nightshade, belladonna, &c., possess anodyne qualities. See vol. ii. of *White's Farriery*.

ANT

ANTACIDS. See *Absorbents*.

ANTHELMINTICS. Medicines which destroy or expel worms from the body. For further information respecting this class of medicines, see vol. ii. of *White's Farriery*, art. *Anthelmintics*.

ANTICOR. A swelling of the breast just opposite the heart (whence its name), which sometimes extends under the belly to the sheath or udder. According to Solleysel, it is a dangerous inflammatory disease, dependent upon a redundancy of blood. M. de Saunier informs us that "it is mortal, if not soon relieved; especially in hot countries, where twenty-five out of thirty horses generally die of it. In Holland, on the contrary, twenty-five out of thirty will generally recover, if properly treated." Gibson, in his *Farrier's New Guide*, designates it as an "inflammation of the gullet and throat," and both the elder and younger Lafosse consider it as a local disease. It often attacks young horses and colts at grass, whence it has been named the "colt evil." To me it appears to depend upon a fulness of blood, caused by too luxurious and pampering diet. It should, in its early stage, be treated by copious bleeding, according to the strength of the patient, and low keep, together with other antiphlogistic remedies. With regard to the swelling, it should be well fomented with warm applications until the inflammation subside, and it pit on pressure, retaining for some time the impression of the finger; when it should be scarified to the depth of half an inch. (See *Scarification*.) Should the swelling continue, attended with symptoms of great debility, tonics and diuretics should be administered; and if the weather and season be favourable, the horse may be turned into a paddock where the herbage is short and not too plentiful. If the horse be kept in a stable, his diet must be light, nutritious, and regular. The following ball will be found serviceable.

Carbonate of soda, one dram.

Powdered cascarilla, two drams.

Sulphate of iron, two drams.

Powdered gentian, two drams.

Powdered ginger, half a dram.

Treacle, enough to form the ball.

ANT

To be given twice a day. The disorder termed Anticor, I consider as a dropsical disease. See *Dropsy*; and vol. i. of *White's Farriery*.

ANTIDOTES. Medicines that prevent or remove the effects of poison. When a horse has been maliciously poisoned by arsenic or corrosive sublimate, a solution of soap in some mucilaginous fluid, such as infusion of linseed, should be given freely. Oil and salt of tartar have been recommended also, and the liver of sulphur (sulphuret of potash). The poison generally employed to destroy dogs is nux vomica. When a dog has been seen to swallow this poison, an emetic given soon after will effectually prevent any ill consequence. I have known it succeed even after the convulsions which nux vomica occasions had commenced. Emetic tartar, turpeth mineral, or salt, are more certain in their effect than other preparations, and should be given in rather larger doses than are usually employed. See *Emetics*.

ANTIMONY. A medicine much used in farriery. It is variously prepared; and though some of the preparations formerly employed are now thought by many veterinary practitioners unnecessary, and I am inclined to believe they are so, the following account of them may not be uninteresting.

1. *Antimony, or Sulphuret of Antimony.* A black, shining mineral, composed of sulphur and a peculiar metal, which, by a chemical process, may be separated from it. When finely powdered or levigated, it is considered a good alterative medicine, and is commonly employed in the diseases named Surfeit and Hidebound. It is often given merely with a view to improve the horse's appearance, that is, to give him a fine glossy coat. It is generally recommended, also, for those diseases of the skin which cause a horse to rub himself against the stall, &c. Sulphuret of antimony is certainly an *innocent* medicine in the horse; but its efficacy has been doubted, on account of its apparent inertness. The common dose is about an ounce: it may be given, however, in larger doses with safety. See *Rees's Cyclopædia*, art. *Antimony*.

2. *Crocus of Antimony, or Liver of Antimony.* This is said to be more active than the former, and certainly

ANT

is so in the human body; but in the horse its effect is not so perceptible. This preparation, like the former, is commonly given as an alterative, in doses of an ounce. It is employed, also, to improve the horse's condition, and, if assisted by good grooming, will probably have that effect.

3. *Calx of Antimony*, washed and unwashed. The former has been named also diaphoretic antimony, and is now very rarely used, on account of its inactivity; the latter has been thought more active, but is not often employed. The dose, three or four drams.

4. *Antimonial Powder*. A white powder, prepared from sulphuret of antimony and shavings of hartshorn; said to be nearly the same as the celebrated James's powder. This has been recommended in colds and fevers, in doses of three or four drams.

5. *Precipitated Sulphur of Antimony*, or *Golden Sulphur of Antimony*. This preparation has been found useful in obstinate diseases of the skin, when joined with a small proportion of calomel. The dose, from one to two drams, with about a scruple of calomel.

6. *Tartarized Antimony*. Emetic tartar. This preparation is more frequently employed in veterinary practice than any other. Though a violent emetic in the human body and most quadrupeds, its effect on the horse is very inconsiderable. It is commonly given, however, in colds and fevers, as a diaphoretic. The dose is about two drams. In dogs it is a good emetic: the dose, from two to six grains, according to the age and size of the animal. The effect of emetic tartar on cattle has not, I believe, been accurately ascertained; therefore it should be given cautiously.

7. *Muriate of Antimony*. *Butter of Antimony*. A strong liquid caustic, often employed in veterinary practice. When mixed with water, it is decomposed; therefore should be used alone.

ANTIPHLOGISTICS. Medicines that cure inflammatory complaints. The term is applied, also, to any general mode of treatment or regimen that is calculated to cure inflammation.

ANTISEPTICS. Medicines which prevent or correct putridity. Among the principal are, the pyroligneous

ANT—APO

and acetic acids, bark, charcoal powder, carbonic acid gas, prepared ammonia, nitrous and nitric acids, &c. These correct the fetid smell of ulcers, and of the matter discharged from the heels in the disorder named Grease. The fermenting poultice has likewise the same effect. See *Poultice* and *Grease*.

ANTISPASMODICS. Medicines which are employed in spasmodic or convulsive disorders; such as spasmodic colic, locked jaw, &c. Opium, æther, and camphor, are considered as the most powerful remedies in these complaints.

ANTRUM MAXILLARE, or ANTRUM OF HIGHMORE. A cavity in the upper maxillary bone, immediately above the grinding teeth. In glanders, this cavity sometimes contains matter.

ANUS. The termination of the rectum or last intestine, which gives exit to the fæces. See *Intestines*.

AORTA. The largest artery of the body. It proceeds from the left ventricle of the heart.

APERIENTS. See *Cathartics* and *Laxatives*.

APOPHYSIS. A term in anatomy, which signifies a process, projection, or protuberance of bone beyond the plain surface.

APOPLEXY. In this disease, the animal falls down suddenly, and remains nearly or quite motionless, but the pulse and the breathing continue. The previous symptoms of apoplexy, according to Gibson, are, "drowsiness, watery moist eyes, somewhat full and inflamed, a disposition to reel, feebleness, a bad appetite, and almost a continual hanging of the head, or resting it in the manger; sometimes with little or no fever, and scarce any alteration in the dung or urine. When the apoplexy proceeds from water in the cavities of the brain, the horse has generally, besides all these symptoms, a disposition to rear up, and is apt to fall back when any one goes to handle him about the head. This is a case I have often seen, but does not prove suddenly mortal. Young horses are most subject to it, and with proper care and good usage sometimes get over it; but when the apoplexy proceeds from blows or wounds in the head, or from any other cause producing rupture of the blood-vessels, or from matter or water collected in

APOPLEXY.

the brain or its membranes, or tumors on any part of the brain, we shall not only see most of the symptoms already described, but the horse will be frantic by fits, especially after his feeds, so as to start at every thing that comes near him. These cases are extremely dangerous, and seldom admit of a perfect recovery. When horses fall down suddenly, and work violently at their flanks, without any ability to rise, even after plentiful bleeding, they seldom recover. All that can be done, in such cases, is to strike the veins in several parts at once; to raise up the horse's head and shoulders, propping them with plenty of straw; and if he survive the fit, to cut several rowels; though in cases of ruptured vessels, or of any kind of extraneous matter lodged in the brain, all these helps will be of little service. But if the apoplectic fit be only the effect of plethora, or fullness of blood, from high feeding and want of sufficient exercise; or if it be the effect of a sizey blood, which is often the case with many young horses that have been fed for sale, or from catching cold while the blood is in this state; though a horse in these circumstances may reel and stagger, and sometimes fall down suddenly, yet the cure will not be difficult. First of all, bleed plentifully, and keep the horse for some time to an opening diet of scalded bran, and sometimes scalded barley, lessening the quantity of his hay. After two days, repeat the bleeding, but in smaller measure. If the horse has a cold, it will be proper to give him pectoral drinks, such as are prescribed for colds; but if no symptoms of a cold appear, it will be necessary, after bleeding and a spare diet, to give two or three aloëtic purgatives."

It is of the utmost importance, in this disease, to attend to what Gibson has termed the previous symptoms, and by copious bleeding prevent an attack which might otherwise prove fatal. It is also of importance to feed and exercise the horse with great care afterwards, or a return of the disease may be expected. The most effectual means, perhaps, of preventing its recurrence, is a long run at grass, in a situation where the horse can find shelter from the sun and rain. (See *Staggers*.) I have lately met with an apoplectic horse, where a third attack was prevented by bleeding him when he appeared

APOPLEXY.

to become dull and sleepy, and by giving him a mild dose of physic. He was cured in the first place by copious bleeding, clysters, a rowel under the jaws, a blister to the forehead, and a mild dose of physic. A second attack, which took place about a month after, was cured by the same means; and the horse was kept in health for more than a year, by being turned to grass for about two months. A short time since, he was observed to be dull and sleepy, which raised apprehensions of a third attack; but after bleeding and a mild dose of physic he got quite well. In one case, where the horse had been lying insensible for some time, though he bled freely from the jugular vein, a cure was effected by opening both temporal arteries. I recollect a remarkable case that occurred at Canterbury. A horse belonging to the Royal Artillery had been lying insensible for many hours, though it was stated that he had been very freely bled. It was considered a hopeless case, and not worth any farther attention; and as it was supposed possible that blood had been effused on the brain, the horse was trepanned, and an opening made in the dura mater, or outer membrane of the brain, which was immediately followed by a considerable effusion of blood. In about ten minutes after the operation, the horse got up, and being led into his stall, began to feed immediately. The next day he appeared quite well. On inquiring after the horse some time after, I was informed that he continued apparently well for many days, but died a fortnight after the operation. The brain was not examined. I knew a respectable farrier, who informed me that he cured several horses by opening the artery in the under part of the tail, and giving half an ounce of compound spirit of lavender in a little water. It appears certain that plentiful bleeding is the essential remedy; and in young vigorous horses it is probable that the abstraction of arterial blood is more effectual than bleeding from the jugular veins: as the compound spirit of lavender, mixed with water, has been given with good effect, it seems that a moderate cordial is likewise beneficial. I think, however, the bleeding should always be continued until relief is afforded, whether the blood be drawn from the arteries or the veins. I thought it preferable, at

APOPLEXY.

one time, to bleed from the jugular veins in all cases; and probably in old horses, or such as have been ridden hard, this is the best practice; because the veins are weaker, especially in the brain, and therefore more easily ruptured: these veins, also, return their blood immediately into the jugulars; and the opening of arteries is a practice with which few farriers are familiar. (See *Arteriotomy* and *Bleeding*.) It is probable, however, that in young vigorous horses, in high condition, arteriotomy is to be preferred; and, after recovery, it is necessary to attend strictly to preventive measures, otherwise the attack is very likely to return. These measures consist in feeding sparingly, as before observed, and applying a muzzle, if necessary: regular but moderate exercise is also essential; and both may be had at least trouble and expense by turning the horse to grass in a situation where he may find shelter from the sun and the rain, and be unable to eat a sufficient quantity of food without using as much exercise in obtaining it as is necessary to health. The prevention of the first attack of apoplexy is not difficult: it consists in feeding horses properly; in working them with moderation, or in a manner suitable to their age, constitutional strength, and condition; in keeping them in wholesome stables; and if we have not moderate work for them, in taking care that they have salutary exercise, or, what is still better, a run at grass. In taking off blood in this disorder, it is necessary to make a large opening in the vein, or it may be still better to open the temporal arteries. (See *Bleeding*.) I have several times relieved a horse labouring under apoplexy, after he had been bled freely in the neck vein without effect, by opening an artery in both temples, and suffering them to bleed a considerable time. Though the immediate cause of apoplexy be an excess of blood in the vessels of the brain, this may sometimes depend, either wholly or in part, on the stomach being loaded with food, and the large bowels with dung. This is particularly to be suspected, when the horse is known to have a great appetite, especially for hay; or when he has been standing in the stable some time without work. A purgative and clysters, therefore, should never be omitted after

APPETITE.

relief has been afforded by bleeding. It will be necessary, also, to keep the horse on a spare diet, chiefly of bran or grass, for some time afterwards, and to put him loose into a large airy place, where he may move himself about freely. A rowel under the jaws, a seton under the foretop, or blistering the head, has also been recommended; but if the remedies I have advised be properly employed, these perhaps may be dispensed with.

APPETITE. Want of appetite is more frequently complained of in horses, than an excessive or craving appetite; but more diseases, and those of a serious kind, arise from the latter than from the former cause. Want of appetite sometimes arises from over-exertion, or immoderate work, which weakens the stomach as well as all other parts of the body: at other times it is brought on by suffering the horse to overload his stomach and bowels, by standing in the stable without exercise, and eating immoderately of hay. Want of appetite may depend also on a natural delicacy of stomach, and the bad quality of hay or oats. New oats, or such as have been heated and become musty, often disagree with the stomach and bowels, and occasion not only loss of appetite, but likewise a looseness of the bowels, and griping pains or fret. Bad hay is often eaten with little or no appetite, especially such as has become musty or mouldy. Good straw is much better than bad hay, and should always be preferred. Horses that are delicate feeders should have such hay chosen for them as is of a greenish colour, of a fragrant or sweet smell, and full of good herbage, as it is termed. (See *Hay*.) This attention to their food will do much more for them than medicine; indeed, nothing can be more injurious than bad hay; the same may be observed of musty oats, which injure the stomach, and gradually bring the animal into a state of debility (especially if he have much work to undergo); from which it is difficult or impossible to recover him. Farcy and glanders have been supposed to originate from this cause. When the appetite fails, though the hay and corn are good, and the horse has only moderate work, some opening medicine is generally useful; but if the horse has been worked hard, rest

APPETITE.

probably is the only remedy necessary. I have seen tonics do good in such cases. If the horse is young, has a cough, and if on raising the upper eyelid it appears redder than usual, bleeding and bran mash will generally do good. Young horses sometimes refuse their hay, or mangle it, from soreness of the mouth, in consequence of changing their teeth. (See *Mastication, Defective*, in vol. i. of *White's Farriery*.) This is generally attributed to lampas, and the hot iron is applied to the roof of the mouth, close to the front teeth, as a remedy. This operation, however, is never necessary. (See *Lampas*.) When a young horse is changing his teeth, the whole mouth sometimes becomes red and tender; which makes him fearful of eating hay, from the pain it gives him. In all such cases the horse should be kept on bran mash for a few days, or until the soreness of the mouth is removed. All serious internal disorders are attended with loss of appetite. (See *Fever*; and chap. vi. and vii. of vol. iii. of *White's Farriery*.) Though a good appetite be very desirable in a horse, especially in one that works hard, yet the unlimited indulgence of such an appetite often leads to very serious consequences. Some horses will do well upon less food than others; but this does not form any objection to the establishment of a fixed allowance; as it is better to restrain an immoderate appetite, though the horse may suffer some inconvenience from it for a short time, than to indulge it. The evil consequences of such indulgence are gradual in their progress, and often so slow as to escape observation; so that when they amount to a serious disorder, the cause of that disorder is lost sight of. A horse's allowance of oats is almost always limited. The expense of this article induces the proprietor to give no more than appears necessary, and too often prevents him from giving a sufficient quantity: but the quantity of hay is seldom attended to. Not one horse-proprietor in a thousand notices the quantity of hay a horse eats; and there are but few who attend much to its quality. (See *Hay*.) Yet every one will admit, after a little reflection, that it is as necessary to limit the allowance of hay as of

APPETITE.

oats, whether we regard the expense of the article, or the horse's health. If a horse that has naturally a good appetite is kept regularly at work, he has not time to injure himself by eating too much hay, especially if he have a proper allowance of corn. But if such a horse stands idle in a stable for a whole day every now and then, with as much hay as he will eat before him, he generally eats too much, especially if he has but little corn and too much water. In this way he gradually distends or stretches his stomach to twice its natural size. This increased capacity of stomach is always attended with an increased appetite; and so craving is this appetite, that, if a horse be not supplied with wholesome food, he will eat almost any thing that comes in his way, until the stomach be sufficiently filled to allay the sensation of hunger. When a horse eats an immoderate quantity of hay, he is always craving after water; probably because a considerable quantity of water is necessary to assist its digestion. So great is the thirst, that the horse generally loses that delicacy of taste and smell which is natural to him, and drinks almost any water that comes in his way. I have seen a horse drink from a barrel of pig's wash; and I once had a horse brought to me that had injured his mouth by drinking from a bucket of whitewash that had been just prepared from slaked lime. The best method of correcting an inordinate appetite is to diminish the allowance of hay gradually, and keep the bowels in rather a relaxed state by cold bran mash. If the season of the year is favourable, the horse should be turned into pasture where there is but little grass, that he may be obliged to work for his living. Here, if it be not too late, the stomach will gradually become smaller; and as it diminishes in capacity or size it will increase in strength. In the same ratio will the digestive functions be improved, and the delicacy of taste restored. (See *Food, Feeding, Cough, Roaring Asthma, Broken Wind, Worms, Colic, and Staggers.*) So general is the practice of giving horses as much hay as they will eat, and often as much water as they will drink, that an inordinate appetite is a circumstance frequently occurring; and,

APPETITE.

unfortunately, it is seldom attended to until it becomes incurable. It is a circumstance deserving of notice, that the horse's appetite may become so changed from its natural delicate state, that he will not only eat filthy litter, but any earth or rubbish that comes in his way. I have lately heard of a horse that belonged to a butcher; and was kept in a place where sheeps' hanges were hung up. Before the owner discovered it, he gradually acquired a habit of eating the hanges, and gnawing the flesh from the head. At this time the horse will eat a hange when it is offered him, and appears to relish it.

In concluding this subject I wish to make some further observations on weakness or delicacy of appetite; cases which often present themselves to our notice, and render horses unfit for any laborious employment. Weakness of appetite is often constitutional, and cannot be effectually cured; but, when such a horse is wanted only for moderate work, his appetite may be greatly improved by careful feeding, good grooming, and a good stable. His oats and hay should always be of the best quality, and his water such as he relishes most, and not too cold or hard. In summer he should be taken to some running stream to drink. He should have but little food at a time, but the more frequently. He should never have more, but rather less hay put before him at a time than he is inclined to eat: and if at any time he is found to leave hay or oats in his rack or manger, they should be taken out, and, after keeping him without food for some time, some fresh hay or oats may be given. The rack, the manger, and every part of the stall, should be kept clean; and when taken out for exercise in the morning, his stall should be well swept out, his old litter spread out in the open air to get dry and sweet by the evening; and when he comes in from his exercise, some fresh straw should be placed under him. A change of food is often useful to such horses, especially when green food can be had, or carrots, malt, boiled barley, &c. If at any time he happens to work more than usual, and refuses his food, a small cordial ball may be given; or about half a pint of warm ale, sweetened with treacle, and a little ginger grated into it. Should it appear from the

AQU—ARO

ding that the bowels are rather costive, or in a bad state, about half a dose of physic may be administered; and if he is found to scour at any time, a little fine wheaten flour may be stirred into his water: should this fail, a little chalk or clay may be added. Horses often fall off in their appetite, in consequence of high feeding and want of exercise: in such cases it is generally necessary to bleed, and to keep the horse on bran mashes for two or three days; and when the bowels appear to be in a bad state, to give a mild dose of physic. When over-fatigue is the cause of loss of appetite, rest is the only remedy. (See *Feeding, Exercise, Stable Management, Digestion, Digestive Organs*, and vol. iii. of *White's Farriery*.) By these means, not only will a horse be kept in good health, but likewise a great saving of expense will be made; for it should always be remembered, that when any animal eats more than he can digest, he does himself harm, and occasions a waste of food. The reason why we so frequently see horses devouring earth and sand, or licking the whitewash or mortar from their stables, is that, having over-eaten themselves, an acid is formed in their stomachs, which is neutralized by the carbonate of lime contained in the earth, &c. See vols. i. and iii. of *White's Farriery*.

AQUA FORTIS. Weak nitrous acid.

ARABIC, GUM. A pure mucilage, when dissolved in water, and useful in inflammation of the urinary passages, and when the bowels have been strongly acted on by physic.

ARGENTI NITRAS. Nitrate of silver; lunar caustic. This is an escharotic of very great utility in stimulating indolent ulcers, and preventing granulations from rising too high.

AROMATICS. Medicines that have a warm pungent taste, and an agreeable fragrant smell. Of this kind are cloves, allspice, cinnamon, nutmegs, caraway-seeds, &c. The following is a good aromatic cordial powder for veterinary purposes:

Powdered caraway-seeds, 6 oz.

Powdered allspice, 4 oz.

Jamaica ginger, powdered, 2 oz.

Liquorice powder, 2 oz. Mix.

The dose is about an ounce.

ARR—ARS

ARRESTS, or ARRETS. A term given by farriers to a scurfiness of the back part of the hind leg. It is also named *Rat-tails*, which are scurfy lines running from the fetlock upwards. It sometimes takes place in the fore legs, and appears to be a consequence of a mangy affection of the skin, or of lice breeding in the part, which keep up a constant itching. Whenever a horse is observed to be frequently rubbing one hind leg with the other, and at times stamping hard upon the ground from the itching pain he feels, the hair should be cut off, and the leg well washed with soft soap and tobacco water; and when perfectly dry, the mange ointment should be well rubbed in. (See *Mange*.) If rat-tails have already taken place, and the itching has ceased, let them be well washed with soap and water, and all the scurf be cleaned off: some mercurial ointment, coloured with ivory or lamp-black, may then be applied, which will lessen the blemish, and do as much as can be done towards its removal.

ARSENIC. A poisonous mineral, sometimes used in veterinary medicine, both internally and externally. It is of two kinds, white and yellow, and was formerly considered a good tonic, but is now seldom employed with that view. It has been given in glanders and farcy, but without the slightest benefit. From eight to ten grains are a dose, which may be gradually increased. In experiments on glandered horses, as much as two drams at a time have been given without apparent inconvenience; but so various are its effects on different constitutions, that I have known a very small quantity produce a fatal inflammation of the stomach. The use of arsenic should always be discontinued so soon as it is found to occasion loss of appetite and languor; nor should it ever be exhibited on an empty stomach. In some old books on farriery, the fumes of yellow arsenic, made into small cakes with common turpentine and coltsfoot, and then placed on a hot iron, have been recommended as a topical application to the nostrils in cases of glanders; but it is now well known that this disease is constitutional, and consequently not to be cured by any such means. Yellow arsenic has

ART—ASS

been employed to destroy warts; and also, when mixed with lard, as a dressing for fistulous sores; but, although it sometimes effects a cure, it generally causes a great deal of inflammation and sloughing.

ARTERIES. Arteries are elastic membranous tubes, which convey the arterial blood (see *Blood*), for the purposes of nutrition, preservation of life, generation of heat, and the secretion of different fluids, from the left ventricle of the heart to every part of the body, whence it is returned by the veins to the right auricle. They become narrower as they proceed towards the extremities, and are furnished with an elastic, a muscular, and a membranous coat. Arteries have a pulsating motion communicated to them by the impulse of the heart, by which they may be distinguished from veins. They are nourished by their own blood-vessels, which are termed *vasa vasorum*. For a description of wounds of arteries, see *Wounds*.

ARTERIOTOMY. The operation of opening an artery. Arteries that are opened for the purpose of bleeding should be such as are situated immediately over a bone (as the temporal): this admits of compressing them firmly when the flow of blood is to be stopped, and thereby obliterating their canal by placing their sides in contact. This is the best mode of arresting hæmorrhage from an artery, as it is impossible to heal a solution of continuity in these vessels, as we do in veins, on account of their pulsating motion, which, never permitting the wound to be at rest, effectually impedes the restorative process of nature. Hæmorrhage from a small artery may likewise be stopped by dividing the vessel completely with a knife, when its ends will shrink among the cellular substance by which it is surrounded; and this, becoming injected by the blood, will act as a compress, and prevent further bleeding.

ARTICULATION. A joint. See *Joint*.

ASCARIDES. Very small slender worms that are found in the bowels, especially in the rectum. See *Bowels* and *Worms*.

ASSA FÆTIDA. A gum resin. The inspissated juice of the root of a plant that grows in Persia. It has a

ASS—AST

very strong disagreeable smell, like garlic; is a good antispasmodic, and has been successfully prescribed, combined with opium and camphor, in cases of locked jaw. It is also considered to be useful, when joined with squills, in chronic cough, asthma, and broken wind. The dose is about half an ounce.

ASSARABACCA. An acrid plant, the leaves and roots of which, when dried and powdered, have been employed as a sternutatory or snuff, to be blown up the nostrils in cases of staggers, vertigo, diseases of the eyes, &c. It has also been used in infusion.

ASCITES. Dropsy of the abdomen. See *Dropsy*.

ASTHENIC DISEASES. Those diseases which arise from debility.

ASTHMA, or BROKEN WIND. There are various degrees of asthma, which vary from thickness of wind to absolute broken wind. In the latter complaint there is always a difficulty of breathing, attended with more or less wheezing, especially if the horse be put to fast work; and the cough is of a very peculiar kind, being short, weak, and hollow: there is also frequently a discharge of mucus or whitish fluid from the nostrils. A horse may naturally have bad lungs; but a debilitated state of the digestive organs, arising from improper feeding, is a very frequent cause of the disease. In confirmed asthma, there is generally considerable weakness of the muscles of respiration; and this weakness generally extends to the whole muscular system, especially to the muscular coat of the stomach and bowels; arising, probably, from the frequent distention these parts have suffered by the profusion of hay and litter the animal has been in the habit of eating, as well as by the immoderate quantity of water which this food caused him to drink. Hence horses labouring under this disease are generally subject to colic, fret, or gripes; indeed their bowels are almost always affected with flatulency; and this circumstance has led to a most singular operation, which is said to afford the animal relief. It consists in making an opening into the rectum, immediately above the fundament, and keeping it open by means of some tube until it become fistulous. I confess I have

ASTHMA.

never seen, nor do I wish to see, a horse that has undergone this operation ; and I may venture to add, that it is one that should never be performed. Asthmatic horses have generally a voracious appetite, accompanied by an inordinate thirst, and this arises from a distended and morbid state of the digestive organs ; by attending to and correcting the state of which, much may be done to alleviate the complaint. Indeed a strict attention to diet, exercise, clothing, and grooming, with the occasional exhibition of such medicines as may be requisite, will frequently effect a cure of this disorder. The best mode of feeding a broken-winded horse is to keep him on bran, with such an allowance of oats as his work may render necessary. Very little hay should be allowed ; not more than eight pounds in the day and night : and all his food should be wetted ; which will not only render it easier of digestion, but likewise tend to diminish the constant thirst with which such horses are generally afflicted. His oats may be given him alone and unbroken, unless he be found to swallow them too greedily, and without sufficient mastication (which may be known by their passing whole with the dung) ; in which case they should be bruised, and mixed with bran. His litter should be removed during the day, and at night he should wear a muzzle. In exercising him, care should be taken not to ride him too fast : his pace should not exceed a walk for the first two miles, nor should he ever be ridden upon a full stomach. His clothing should be moderately warm, and his stable well ventilated : but all draughts should be carefully avoided ; nor should he ever be exposed for any length of time to a cold atmosphere, as this will inevitably aggravate his complaint. His water must never be given cold ; and when it is deemed advisable to give him green meat of any description, it should be dealt out to him in small quantities at a time, and given more as physic than aliment. By this I would not be understood as condemning the use of green food for these horses, which I think beneficial ; but would merely advise that they should never be permitted to glut themselves with it, which all horses, whether broken-winded or not, are very apt to do. By attending to these directions, a

ASTHMA.

horse may be cured of broken wind; but the disease is always liable to return, unless the same regimen be invariably adhered to. I once purchased a horse with confirmed asthma, and which was sold as thoroughly broken-winded; yet was he perfectly cured by pursuing the course which I have recommended, and did his work as a saddle-horse for some time afterwards. A run at grass in summer, where the pasture is short and not abundant; so that the animal is forced to work for his living, has been known to effect a cure. When medicines are necessary, I think the following mixture of diuretics and cordials or tonics will frequently be found beneficial:

MIXED BALL.

Take of common turpentine, strained, four ounces.

Castile soap, four ounces.

Beat them well together in a mortar, and, when well mixed, add of

Powdered Jamaica ginger, one ounce and a half.

Powdered allspice, two ounces.

Recently powdered caraway-seeds, four ounces.

Flour, or liquorice powder, enough to form a mass fit for balls.

This is to be divided into ten or twelve balls, one of which may be given daily for a few days in those cases where the asthma is not sufficiently relieved by attention to diet, &c. The following expectorant may sometimes do good:

Gum ammoniacum, two ounces.

Powdered squills, one ounce.

Powdered ipecacuanha, half an ounce.

Powdered opium, half an ounce.

Powdered ginger, one ounce.

Powdered allspice, one ounce.

Oil of anise-seeds, half an ounce.

Balsam of sulphur, four ounces.

Castile soap, sliced and softened by being placed in a gally-pot with two or three ounces of warm water, two ounces.

To be beat into a mass, and divided into middling-sized balls, one of which may be given morning and

AST—ATT

evening until the desired effect be produced. If a mild dose of physic be previously given, they will generally be found more efficacious.

When it is found difficult or inconvenient to give balls, the following powder, mixed with the horse's bran, may be substituted :

Take of yellow resin, levigated antimony, and nitre, each three drams, and mix them for one dose: to be given twice a day for six days. When an asthmatic horse is allowed two bran mashes a day, and has all his hay dipped in water, he will not require more than one gallon of water four times in the day. Each mash should contain at least a quarter of a peck of bran, and should not exceed half a peck. See *Cough, Broken Wind, Roaring, Catarrh or Cold, Water, Exercise, Feeding, Appetite, Digestion, and Lungs*. See also vol. iii. of *White's Farriery*.

ASTRAGALUS. The name of one of the principal bones of the hock. See *Frontispiece*.

ASTRINGENTS. Those medicines which possess a power of making the living fibres of muscles contract, and become corrugated and condensed. The principal are kino, oak-bark, dragon's blood, extract of catechu, bark, alum, opium, and the different preparations of copper, lead, and zinc. Astringents are given internally in all relaxations of the solids causing morbid evacuations. See vol. ii. of *White's Farriery*.

ATLAS. The first vertebra or bone of the neck.

ATONY. A want of tone or strength.

ATROPHY. A gradual, and sometimes rapid, wasting of the body. See *Consumption*.

ATTAINT, upper and nether, or higher and lower. A term used by farriers to denote the wound which a horse inflicts upon the back part of the fore leg by stepping upon it with the hind leg, or over-reaching, as it is termed. See *Wounds, Bruises, and Tread*.

ATTENUANTS. Those liquids which are supposed to made the blood and humours thinner; such as bran water, or white water, as it is called, either alone, or with a small addition of nitre.

AUR—BAC

AURICLES. The two smaller cavities of the heart. See *Heart*.

AZOTE. See *Nitrogen*.

AZYGOS. The name of a vein near the heart. As its name implies, there is no corresponding vein of the same kind.

B.

BACK, GALLED. When accidents of this kind occur, they are generally a consequence of inattention on the part of those to whose care the saddle or harness is committed. Whenever any swelling or tenderness is observed about a horse's back or shoulder, it should be frequently bathed with the following lotion:

Goulard's extract, half an ounce.

Vinegar, four ounces.

Water, one pint. Mix.

Should the injury be caused by the harness or saddle, they should be carefully examined, and their shape altered so as to prevent friction of the wounded part. A nail, or stub, in an old saddle, is frequently the origin of this complaint, and should be removed, and the saddle restuffed. Should the skin have been so bruised as to cause a sitfast (see *Sitfast*), or hard, dark-coloured scab, let it be rubbed twice or three times a day with camphorated mercurial ointment (see *Mercurial Ointment*, vol. ii. of *White's Farriery*), until it become sufficiently loosened to be taken off. Some force is generally necessary to accomplish this, and the knife is often required to effect the separation. When the sitfast is removed, dress the sore twice or three times a day with a mixture of burnt alum and red precipitate, and afterwards with the following ointment:

Saturnine ointment (see vol. ii. of *White's Farriery*), four ounces.

Finely powdered alum, one ounce. Mix.

When this treatment is adopted in time, it will generally be effectual in curing the complaint, provided the pressure which produced it be discontinued, without which no application whatever can possibly be of service. It is by neglecting to remove the cause of the injury, that

BAC—BAL

abscesses, and not unfrequently fistulæ, of the withiers are generated. See *Abscess* and *Fistula*.

BACKING. Mounting a colt or filly for the first time. See *Breaking*.

BACK-RAKING. This is the name given by farriers to the operation of introducing the hand into the fundament, and withdrawing the fæces contained in the rectum. It is often necessary to do this, for the purpose of throwing up a clyster when the gut is full of hardened dung, which sometimes accumulates in such quantity as to prove an obstruction to the passage of the urine. When, therefore, a practitioner is called in to examine a sick horse, he should generally perform the operation of back-raking, in order to ascertain the state of the animal's excrement, and the quantity of urine contained in the bladder. See *Bladder* and *Urine*.

BACK SINEWS. The flexor tendons of the fore and hind legs are so named. They are very important parts, and very frequently strained or otherwise injured by over-exertion or accidents. In all such cases the leg should be immediately cased in an emollient poultice, extending from the hoof to the knee or hock: the animal should be bled freely; have a dose of physic and a clyster administered to him; and be turned into a loose box, where he should be kept upon a light cooling diet. See vol. iii. of *White's Farriery*, art. *Strain of the Flexor Tendons or Back Sinews*; and *Hints to the Purchasers of Horses*.

BAGS. See *Mouth*.

BALATADES. A term in the manège or riding-school. One of the lessons a horse is made to practise in teaching him to leap.

BALL. Bolus, or large pill: a form in which medicine is commonly given to horses. A ball should not exceed the size of a hen's egg, which it should somewhat resemble in form, although its general shape is cylindrical. An instrument named a balling-iron is frequently used for the purpose of keeping a horse's mouth open while the ball is pushed into his throat, but is never necessary, as the medicine may very easily be given by drawing out the tongue to the right side, and holding it with the left hand, while an assistant

BALL

stands on the left side and holds the mouth open. The ball is to be held by the finger and thumb of the right hand drawn into as small a compass as possible, and passed as far as the horse's throat. This must be done by a quick motion of the hand, which should be kept towards the roof of the mouth, as there is more room for it in that direction; the branches of the upper being wider than those of the lower jaw, and the inside of the upper grinders being generally low, and free from sharp edges. Much injury has been done by giving balls of too large a size, and such as are wrapped in coarse brown paper, or have been kept until they have become hard: such balls are apt to stick in the œsophagus or gullet, and I have known this accident occasion death. With respect to the hard or soft state of a ball, it should be made more or less soluble, according as we wish it to operate upon the stomach, large intestines, or rectum: for those medicines which (like gamboge) are readily dissolved in the stomach, are quick and violent in their effects, and liable to derange the functions of this viscus; while those, on the contrary, which are not so easily soluble, pass through a large portion of the intestinal canal before they take effect. Thus colocynth, whose active principles reside both in soluble and insoluble elements, has a wide range of operation; and aloës, which are still farther insoluble, pass through the whole alimentary canal before they are sufficiently dissolved, and, consequently, act more especially upon the rectum than any other bowel. This enables the practitioner to vary the effects of different medicines, by rendering them more or less soluble; and we know by experience that the operation of aloës is quickened, and its tendency to irritate the rectum diminished, by combining it with soap or an alkaline salt. Thus, when it is wished to empty the large bowels only, and aloës be administered for this purpose, they should be sufficiently softened with water or treacle to cause them to act with greater expedition. (See *Cathartics*.) With respect to cordial balls, they should always be made very easy of solution, as they are intended to act principally on the stomach; and those balls that contain turpentine, or any resinous

BAL

substance, should always be combined with soap, otherwise they become very hard, and are dissolved with difficulty. When many balls are made at one time, great care should be taken to mix the powders well together before they are formed into a mass, in order that all the balls may contain an equal proportion of the ingredients of which they are composed.

BALLING IRON. An instrument for keeping open a horse's mouth during the administration of a ball.

BALM. A weak aromatic herb.

BALSAM. A name applied to several resinous substances; such as Balsam of Tolu, Peruvian Balsam, Canada Balsam, Balsam of Copaiba, &c. Some preparations, such as Balsam of Sulphur, Friar's Balsam, &c., are likewise so called. See vol. ii. of *White's Farriery*.

BALSAM OF THE CANADIAN FIR, or CANADA BALSAM. A pure kind of turpentine, whose medicinal qualities are stimulant and diuretic. See *Turpentine*.

BALSAM COPAIBA or CAPIVI. A strong diuretic. It has been recommended also in flatulent colic and chronic cough. The dose about one ounce.

BALSAM, or BALM, OF GILEAD. This is the purest and most expensive of the turpentines; not differing essentially, however, in its medical properties, from Canada balsam.

BALSAM OF LOCATELLUS. A preparation made of oil, turpentine, wax, and red sanders; now rarely used, except by old farriers. It was formerly given in coughs of long standing.

BALSAM OF PERU. A dark-coloured fluid, of a fragrant smell and strong acrid taste. It has been recommended in chronic cough, and in the early stages of broken wind. The dose about two or three drams, generally mixed with squills, ammoniacum, or other expectorants.

BALSAM OF SULPHUR. A preparation made by boiling sulphur and olive oil together until united in the form of a dark-coloured tenacious mass. This has been much esteemed by old farriers in obstinate coughs, but is now seldom employed. When mixed with a small

BAL—BAN

proportion of oil of anise-seed, it has been thought more efficacious, and is then named Anisated Balsam of Sulphur.

BALSAM OF TOLU. A solid resinous substance, of a yellowish colour and fragrant smell. It is sometimes used as an expectorant in chronic cough. The dose, two or three drams.

BALSAM, TRAUMATIC, or FRIAR'S BALSAM. A popular remedy for wounds and ulcers, made by dissolving gum benzoin, balsam of Tolu, and aloës, in rectified spirit of wine. The modern name for this preparation is *Compound Tincture of Benzoin*.

BANDAGE. Strips of linen or flannel about three or four inches wide. They are serviceable in habitual swellings or puffiness of the legs, in weakness of the fetlock-joint, as a palliative for wind-galls, and in all cases of debility arising from a loss of tone in the vascular system. They may likewise be used for the purpose of keeping on dressings, of assisting in uniting parts in which there is a solution of continuity, of expelling matter, or preventing the descent of ruptures, and as compresses for restraining hæmorrhage. As it is impossible to give a description of the various sorts of bandages required for these different purposes, I shall merely say, that in applying any long bandage, as to the leg for instance, the flannel or linen must be rolled up, and the bandage fixed by making two or three turns in the same place; after which the roller may be carried on spirally, taking care that every turn of the bandage overlaps about two-thirds of the preceding one. Where the inequality of the parts causes the bandage to bag, it must be reversed, or folded over; that is, its upper must become its under border, and *vice versâ*. A bandage should be moderately tight, so as to support the parts without impeding the circulation, and should be so applied as to press equally on every part. In bandaging a horse's legs, which many people are in the habit of doing after a hard day's work, the roller should be applied from the coronet to the knee; otherwise, if it be tight, the parts above the bandage will swell, and cause numbness of the limb. Indeed, in every case, it is advisable to bandage from joint to joint, as partial

BAN—BAR

bandaging, when tight, is injurious. For further particulars respecting bandages, the reader may consult Bourgelat's *Essai sur les Appareils et sur les Bandages propres aux Quadrupèdes*. Adhesive plasters are sometimes employed as bandages. See *Charge*.

BANE or BAIN. A term used in Dorsetshire for the rot in sheep.

BARBADOES ALOES. See *Aloë*.

BARBADOES TAR. A bituminous substance, brought from the island of Barbadoes. Its effects are diurectic. When employed as an external application for strains and bruises, it is generally dissolved in oil of turpentine and oil of elder. See vol. ii. of *White's Farriery*.

BARBS, or BARBLES. On drawing out the horse's tongue on one side, two very small pap-like substances may be seen in the under jaw, one on each side the groove or channel in that part: these little eminences are the terminations of the salivary ducts, which convey the saliva from the glands which form that fluid into the mouth. In books of farriery they are said to be sometimes inflamed, and so enlarged as to hinder feeding, and the disease is named the Barbs. The remedy proposed is cutting them off with a pair of scissors, and afterwards applying salt, or touching the parts with lunar caustic. Mr. Blaine reprobates the practice of cutting them off, and thinks it may be productive of serious consequences, by causing obstruction in the salivary ducts. I have often seen these parts inflamed and tender, as well as the whole of the membrane of the under part of the tongue and jaw, but never found such an operation necessary. Young horses, when cutting their teeth, have generally these parts inflamed more or less, and sometimes in so considerable a degree as to render feeding very painful. In such cases I have found that by bleeding, bran mashes, and syringing the parts with a solution of alum, the inflammation has soon subsided. We sometimes meet with swellings on the inside of the cheeks, commonly named Bags or Gigs, which may be cured by excision. (See *Mouth, Diseases of*, vol. i. of *White's Farriery*.) Horses bred in Barbary are called Barbs.

BARILLA. A marine plant, from the ashes of which

BAR

mineral alkali, or soda, is obtained in an impure state.

BARK. This name is often applied generally to several different species of bark, the principal of which are the Peruvian, the yellow, and the red. Although a powerful tonic when administered internally to the human subject, its effects are not so remarkable upon the horse. Its dose is from one to two ounces; and it is sometimes applied in powder to indolent and relaxed ulcers. See vol. ii. of *White's Farriery*.

BARLEY. Barley, given as food to horses, is generally found difficult of digestion, unless steeped in water, or ground, in which mode it is very nutritious, and easily digested; so much so, indeed, as to be frequently given to sick horses. I was lately informed that Mr. Rogers, a postmaster at Southampton, has, for several years, fed his horses upon barley, previously steeped in water for twelve hours, and mixed with chopped straw: he allows no hay; and his horses do more work, and are in better condition, than those of his neighbours employed in the same labour. The allowance of steeped barley for each horse per day is two pecks, and one bushel of straw. Mr. Coke, of Norfolk, has tried the experiment of feeding his farm-horses on barley steeped in water until it begins to sprout, and has found that it will go as far as double the allowance of oats. The legislature, however, having heard of Mr. Coke's practice, has compelled him to *pay the malt-tax!* Ground barley and bran is nutritious and wholesome food. In Spain, and some other countries; I believe, barley is commonly given to horses; and, no doubt, were a young horse, whose stomach is vigorous and healthy, allowed to eat it, he would readily digest it, and thrive well upon it: but the too common practice in this country of allowing horses as much hay as they please, and thereby morbidly distending and weakening their stomachs, renders them incapable of digesting and assimilating that food which, under other circumstances, might have been eaten with advantage.

BAR. The bars of the foot are two ridges of horn, passing from the heels of the hoof towards the toe of

BARS.

the frog. They appear to be a continuation of the crust, or wall, of the hoof, bent inwards at the heels, to which they serve as props; preventing them from approaching each other, and assisting in giving spring or elasticity to the outer wall, or horn, of the hoof. In preparing the foot for shoeing, the bars are very frequently pared away; and that with a view to open the heels, and make them apparently wider: thus the points of union between the bars and the crust, which are a great support to the heel, are destroyed, and the foundation laid for contracted heels. If a shoe of the usual length be then applied to the foot, half an inch, and sometimes an inch, of the heel has no bearing; and this tends to loosen the nails, in addition to the evil of rendering the bars useless, or nearly so, until a fresh deposition of horn has taken place from the secreting vessels of the hoof. The point of union between the bar and the crust forms a very strong bearing for the heel of the shoe, and, when made level by the rasp, shows the smith the exact length which the shoe should be of; for it should never pass beyond this part, nor should it ever be too short to cover it.

BARS of the mouth. Transverse ridges on the roof of a horse's mouth: they are most conspicuous, or full, in young horses. When swollen, or fuller than usual, the horse is said to have the *Lampas*. (See *Lampas*.) A horse is sometimes bled by striking a fleam into the second bar from the front teeth, in a line drawn backward from the second or third front tooth. See *Bleeding*.

BARS, or bearing part, for the bit. This name is given by riding-masters to that part of the under jaw which lies between the tusk and the first grinder: it is very frequently injured by jerking or pulling hard at the bit. This not unfrequently occasions caries of the jaw-bone, which, if unattended to, will cause serious mischief. In this case, the bone, after being laid bare, should be scraped with a rougine, or drawing knife, and the wound dressed with a solution of blue vitriol, or tincture of myrrh. The horse must be kept for some time on soft food. When the injury is superficial, it goes off in a few days, provided the animal be fed on bran mash, or any other provender that is easily mas-

BAR—BAT

ticated. The cure may be accelerated by washing the part with alum water.

BARS of a coach. The bars of a coach are suspended by iron hooks to the pole, and the leaders are harnessed to them by having their traces hooked on to them. They are three in number: one large one, which hangs by its middle from the extremity of the pole, and two smaller ones, each of which is affixed to either extremity of the first. The traces of the leaders are separately hooked on to the small bars.

BARYTES. (*Terra ponderosa; Marmor metallicum.*) The muriate of barytes has been considered by some writers on veterinary medicine, as efficacious in curing farcy; but Professor Huzard, after having apparently cured some horses of this disease by giving them about two drams of this medicine per day, found that they every one died at the expiration of three weeks; and M. Duprey once killed a mare by giving her one ounce of the muriate of barytes for a dose. As it is a poison when given in large quantities, great caution is requisite in using it.

BASILICUM. Ointment of yellow resin. A good digestive ointment, composed of equal parts of olive oil, yellow wax, and yellow resin. These are to be melted over a slow fire, and, when removed from it, are to be stirred until the mixture be cold, without which some separation of its ingredients will take place in cooling.

BATHING. This is a remedy that is sometimes employed in lameness supposed to depend upon some injury of the shoulder. However, I have never seen it do good myself, though it may be worth while to give it a trial where other means have failed. Cold bathing has likewise been recommended in locked jaw, but I have seen it used in that complaint without any beneficial result. Mr. Blanchard, veterinary surgeon to the First Dragoons, once turned out a horse labouring under locked jaw into the barrack-yard on a very frosty night, and the next morning he was entirely free from the complaint. At the veterinary college, a case of locked jaw in a horse was treated by covering the animal with snow: this, for some time, appeared to do good, but, on

BAY—BEL

being again taken into the stable, the spasm returned. (See *Locked Jaw*.) According to Mr. Sewel's description of the veterinary colleges on the continent (see *Preface* to vol. i. of *White's Farriery*), it appears that they are in the habit of employing both hot and cold baths in some diseases to which horses are liable; and Bourgelat recommends a species of shower-bath by which water, either hot or cold, and sometimes impregnated with particular medicines, according to the affection it is intended to remove, may be conducted, by means of a funnel, to any part of the body. This remedy is employed in vertigo or staggers, strains, &c.

BAY. A bay colour in horses is so named from its resemblance to dried bay-leaves. There are various shades of bay, but the dark bays with black legs are generally preferred.

BAY-TREE. The leaves and berries of this tree are employed in veterinary medicine. The former are used in fomentations, the latter in the composition of diapente and other old prescriptions. There is also an oil of bay-berries, which is sometimes employed as an ingredient in discutient and blistering ointments and liniments. See *Fomentations* and *Diapente*.

BEANS. Beans are a useful article of diet for horses that work hard, but unfit for young horses, or such as have but moderate exercise. They should always be split or ground. Small tick-beans are often swallowed unbroken, and are then discharged whole with the dung. Beans in general have small stones mixed with them, which injure a horse's teeth, and probably lay the foundation of those earthy concretions which are sometimes found in the bowels after death. (See *Stone*.) As beans contain a large proportion of gluten, they are well calculated to give firmness to the muscular fibre; but the difficulty of making a horse masticate them properly, requires that they should always be given ground or split. See *Diet*.

BEDDING. See *Litter*.

BEER. See *Ale*.

BELLADONNA. Deadly night-shade; a violent narcotic. It possesses the peculiar property of dilating the

BEN—BIS

pupil of the eye; and is sometimes applied to that organ to cure a morbid contraction of the iris, or rather of its circular fibres. See *Eye*; and vol. iii. of *White's Farriery*.

BENZOIN. A brittle resinous substance, of a fragrant smell, resembling balsam of Tolu, and possessing nearly the same medicinal qualities. (See vol. ii. of *White's Farriery*.) It is the principal ingredient in Friar's or Traumatic balsam.

BICEPS. The *biceps flexor cruris* is a double-headed muscle of the hind leg or thigh, which serves to bend the limb.

BILE, or GALL. A bitter greenish fluid, secreted by the liver for the purpose of assisting digestion. In the horse there is no gall-bladder, or receptacle for the bile, which passes directly into the duodenum, or first of the small bowels, a few inches from the stomach.

BILIOUS. Diseases are called bilious, when supposed to depend on a morbid state of the liver.

BINDERS. A name formerly applied to the bars of the foot. See *Bars*.

BINDING of the hoof. See *Hoof, Contracted*.

BIRTHWORT. This root sometimes forms an ingredient in cleansing drenches. It is a weak stimulant.

BISHOPPING. When artificial marks are made in the horse's teeth, to give him the appearance of greater youth than he really possesses, he is said to be bishopped, and the operation is termed *bishoping*. It consists in making a small orifice with the graver in each of the corner teeth, resembling in situation and form, as nearly as possible, the natural marks which are found in these teeth when a horse is six, or between six and seven years old: they are then touched with a small hot iron to imitate the brown colour of the natural mark. However dexterously this operation may be performed, it is easily discovered by a person accustomed to examine the teeth of horses; and such as have not had this advantage may observe a want of correspondence in the state of the tushes, or the marks of the upper teeth: and, if the horse's age is considerable, it may be known by his gene-

BIS—BIT

ral appearance, by gray hairs over the eyes and about the forehead, by the teeth being much longer than in young horses, and approaching more to the horizontal position. In black horses, I have known the gray hairs concealed by means of black powder, which was discovered by passing the hand over the eyes. See *Age*.

BISTORT. The root of this plant is a powerful astringent. Its dose is from half an ounce to an ounce. See vol. ii. of *White's Farriery*.

BISTOURY. A small knife used in surgery.

BIT. The bits most generally made use of are the snaffle and curb. They may be used together or seperately. A snaffle may be either plain or twisted, but the latter is unnecessarily severe, and tends only to render a horse's mouth callous: it consists of two pieces of iron joined together with a species of hinge, and, when plain, is the simplest, the least cruel, and the pleasantest sort of bit that is made. When used for the purpose of breaking in young horses, it is made very large, so as not to hurt the mouth, and has several small moveable pieces of iron affixed to it, which, by exciting the colt to work them about with his tongue, causes him to foam, and is supposed to assist in forming his mouth. It is rather difficult to give a correct description of the curb-bit. Its shape is something like the letter H; but the cross bar, which goes into the mouth, is bent in the centre nearly in a semicircular form: a chain is affixed to it, and goes from one side of the bit, behind the lower jaw, to the other. The bridle is fastened to the side-pieces, which act as levers of different powers, according to the distance from the cross bar at which the bridle is attached to them. The curb-chain may be tightened or loosened, as the horse's mouth is hard or soft. When pulled, the levers or side-bars of this bit, which lie parallel with the horse's mouth, are drawn towards the rider, and form a more or less acute angle with their former position, according to the strength with which they are pulled: this tightens the curb-chain, which compresses the lower jaw, while the bent part of the cross bar forces the horse to open his mouth. It is an extremely severe bit, and only ne-

BIT—BLA

cessary for hard-mouthed horses, or such as do not carry their heads well. In the latter case it should be used with moderation, a continual strain upon any bridle only tending to render a horse's mouth callous. (See *Riding*.) These are the bits in most general use, but several modifications of them are manufactured to suit the mouths of different horses. The snaffle is sometimes hollowed out and made with sharp edges for very refractory horses; but such things should never be used, as they are unnecessarily cruel, and often extremely injurious. A horse's mouth generally depends upon the hand of the rider, and I have known two hunters, of the most stubborn disposition when severely bitten, that became perfectly docile and manageable when ridden in light snaffles covered with wash-leather.

BITE of any rabid animal. The only chance of cure for this accident is to excise the bitten part with a cutting instrument, or to cauterize it deeply.

BITE, venomous. When dogs or horses are bitten by a viper, or other venomous animal, there is generally very great swelling of the part, attended frequently with fever and general indisposition. In such cases it is advisable to bleed, according to the state of the pulse; and after having well fomented the wound, to apply to it a liniment composed of one ounce of liquid ammonia and two of olive oil. Some nitre may be given in bran-mashes: about an ounce, morning and evening.

BITTER APPLE. *Coloquintida*; colocynth. A violent purgative when administered to the human subject, but useless as a horse-medicine. After a fair trial at the College, it has been declared of no service in veterinary practice.

BITTER SWEET. *Dulcamara*. A diuretic and narcotic medicine. See vol. ii. of *White's Farriery*.

BITTER WOOD. See *Quassia* and *Gentian*.

BITTING. See *Breaking*.

BITUMEN. Combustible substances, generally possessing a strong aromatic odour. Those most used in veterinary medicine are Barbadoes tar and amber.

BLACK LEG. See *Quarter Evil*.

BLACK WATER. This is sometimes a termination of red water. See *Red Water*.

BLADDER.

BLADDER. The bladder is a musculo-membranous bag, situated, when empty, in the cavity of the pelvis. Its use is to contain the urine, which flows into it from the kidneys through the ureters. It is divided into three parts: viz. the *fundus*, which extends forwards; the *body*, or most capacious part; and the *cervix* or *neck*, which projects posteriorly, and is of a light pinkish hue. When full, the fundus of the bladder protrudes out of the pelvis into the abdominal cavity; and this part then receives a tunic from the peritoneum. Its other coats are an internal mucous membrane, and an external muscular coat, formed of two distinct sets of fibres, the one longitudinal, the other transverse or circular. The former are thickest about the fundus, the latter more developed about the cervix, which, by this arrangement, is always kept closed, except during the time of voiding the urine. On opening horses that have died from accident, we sometimes find the bladder empty, and its muscular fibres so condensed, that it appears like a solid mass of small dimensions: such is the contractile force of its muscular coat, by which, with some assistance from the abdominal muscles and diaphragm, the urine is expelled. I have now in my possession a dry bladder capable of containing two gallons of water; and yet, had the animal from which it was taken been killed immediately after voiding his urine, it would have appeared scarcely larger than a man's fist. When a horse is accustomed to drink a large quantity of water, or is frequently taking diuretic medicines, without being allowed to stale often enough while at work, the bladder becomes weakened, and, in some instances, paralysed, by over-distention; and this weakness increasing, the cervix or neck of the bladder becomes at length so relaxed as to be unable to offer sufficient resistance to the muscles which propel the urine into the urethra, so that it is constantly dribbling off as fast as it is secreted. This is termed *incontinence of urine*, and may be the effect of the causes already mentioned, or produced by injuries of the back, such as dislocations, or caries of the vertebræ, pressure on the spinal marrow, &c. Excessive irritability of the bladder, causing it to contract forcibly upon the reception of a very small quantity of urine, may like-

BLADDER.

wise occasion this complaint. Blisters to the back and loins, cold bathing, and perhaps tonic medicines, when the disease is not of very long standing, and the exhibition of small doses of cantharides, may cure incontinence dependent on debility of the bladder; while an irritable state of that organ, indicated by the animal frequently voiding his urine in small quantities, and with some degree of pain and difficulty, will require venesection, purgatives, warm fomentations, and mucilaginous drinks; as the decoction of marsh-mallows, or linseed tea with gum arabic. Sometimes the irritability of the bladder depends upon acrimony of the urine, and whenever this is the case, it will generally be found that its remote cause is high or foul feeding: the diet must therefore be regulated accordingly; for unless the exciting cause be removed, the disorder will remain: on the other hand, *sublatâ causâ tollitur effectus*. Should the urine be found to contain acid, an alkali must be administered, *et vice versâ*. The bowels should be kept moderately open with clysters and laxative balls, and all stimulating food be carefully avoided.

Inflammation of the bladder is not a disease of very frequent occurrence among horses and cattle: it is generally attended with fever, quick pulse, redness of the membranes of the eye, loss of appetite, and sometimes colic. The difficulty and pain of staling are much greater than in irritability of the bladder; and the urine is commonly voided in smaller quantity; is higher coloured, and not unfrequently bloody. These symptoms I have observed also to take place in inflammation of the kidneys; but in this complaint there is generally tenderness over the loins, accompanied by a remarkable stiffness of the hind legs, if both kidneys are affected, and of one only, if the inflammation be confined to one side. In both cases bleeding is the principal remedy to be had recourse to; and if the pulse be very full and quick, the breathing laborious, and the inner surface of the eyelid red, not less than six quarts should be drawn, provided the animal do not faint before this quantity be lost. Should the bowels be

BLADDER.

costive, a pint of castor oil may be administered, and the animal back-raked. When it is suspected that the kidneys participate in the complaint, the loins may be rubbed with the following mixture, and afterwards covered with a fresh-flayed sheep's skin, the flesh side downwards :

Take, Flour of mustard, 2 oz.

Water, enough to make it of the consistence of cream.

If the symptoms do not abate under this treatment, an anodyne clyster (see *Clyster*) must be thrown up, and the following ball be given every six hours :

Take, Camphor, one dram and a half.

Opium, half a dram.

Linseed meal and treacle, enough to form a ball.

Sometimes the neck of the bladder is the seat of the inflammation, and in this case there is generally retention of urine, which may be known by passing the hand up the rectum, as in back-raking, when, if the bladder be distended with urine, it will be immediately felt. If the retention be not relieved by blood-letting, clysters, hot fomentations, and the application of a fresh sheep's skin to the back, then rub the following ointment into the belly, first cutting off the hair for the space of two or three hands' breadth :

Take, Finely powdered tartar emetic, 2 drams.

Hog's lard, 2 oz.

Very gentle and continued pressure upon the bladder through the rectum will sometimes cause an evacuation of urine ; but when all these means prove unsuccessful, the operation of puncturing the bladder with a curved trocar through the rectum, or that of passing a smooth whalebone rod, well smeared with oil, up the urethra, until it be felt a little below the fundament, and then cutting down upon it, and passing a female catheter into the bladder, for the purpose of drawing off the urine, must be had recourse to without delay. Some writers have imagined that the bladder has burst from over-distention ; but this, I believe, never happens, as it is too well supported by the other abdominal viscera to allow of such rupture. However, the effect is the same ;

BLA

for where the urine has been retained for a very long time, the bladder, becoming gangrenous, admits of its escape into the abdomen, and thereby occasions death.

Palsy or paralysis of the bladder is sometimes a consequence of stomach staggers, or injuries of the brain. In such cases, it is only to be cured by removing the exciting cause; but when it occurs as an idiopathic or primary disease, the treatment should consist in the exhibition of such medicines as the muriated tincture of steel, or the tincture of cantharides, and the local application of stimulating liniments. I am not aware of electricity having been tried in this complaint, but should feel inclined to anticipate good effects from it.

BLADDER in the Mouth, or on the Tongue. This is a disease to which cattle are subject, and I believe it generally happens while at grass. The common practice is to break the bladder, and afterwards rub it with common salt.

BLAINE. This disease is described in old books on farriery as "a watery tumor, growing at the root of the tongue, and threatening suffocation. The first symptoms are, foaming at the mouth, gaping, and lolling out the tongue. To cure it, the beast must be cast, the tongue drawn out, and the tumor first opened with a knife, and afterwards washed with vinegar and salt." This is probably the same disease as that just noticed under the name of *Bladder on the Tongue*.

BLAST. A term sometimes used to denote inflammation of the eye.

BLASTING. When cattle and sheep are first turned into a piece of clover or other luxuriant pasture, they frequently gorge themselves with food, which, fermenting in the rumen or first stomach (see *White on Cattle Medicine*, art. *Structure and Economy of the digestive System of the Cow*), so distends it with gas that the animal is in danger of suffocation. The symptoms are most distressing, and, unless relief be speedily afforded, death very commonly ensues. Ginger, peppermint water, and other cordials, often prove of great service at an early stage of the complaint; but when the distension is so great as to threaten asphyxia, or a rupture of

BLASTING.

the coats of the stomach, recourse must be had to an operation for the purpose of giving vent to the confined air. There are two methods of doing this: the one consists in puncturing the rumen at the point where it projects most (that is, on the left side, between the last rib and the haunch-bone), when the air will immediately rush out, and the animal be instantaneously relieved; the other, in passing an instrument called a probang into the stomach, which will be followed by a similar result. A cane with a wooden knob at the end is sometimes used for this purpose; and, when this is not to be had, the handle of a waggoner's whip may be made use of. The distance from the mouth to the rumen of a cow is about six feet. After letting out the air by the first operation, the incision must be kept open, by means of a quill or some other tube, until the animal be completely relieved, after which the edges of the wound must be brought together and retained in their place by a pitch plaster. When an animal has been blown or blasted, he should be fed very sparingly for a few days: a very bare pasture is perhaps the best for him; and, where this cannot be had, his food should consist of bran mashes. Cordials, joined with laxatives, will be found beneficial, and to these may be added carminatives. The following is a useful carminative drench:

Take, Common salt, four ounces.

Barbadoes aloës, in powder, half an ounce.

Powdered ginger, two drams.

Water, one quart. Mix.

To this add two ounces of the following anodyne tincture:

Turkey opium, one ounce.

Cloves, bruised, two ounces.

Ginger, ditto, three ounces.

Brandy, one quart.

Or,

Turkey opium, cloves, and ginger, of each one ounce.

Old brandy or gin, one quart.

These tinctures are to be digested together in a well-

BLEEDING.

stopped bottle for three or four weeks, and shaken several times a day; after which they must be filtered through blotting paper, and kept in any well-corked vessel.

When an animal is only blasted in a moderate degree, the carminative drench will sometimes prove effectual in affording relief, without an operation. After its administration, a clyster composed of one gallon of thin gruel, linseed tea, or warm water, with a handful of salt dissolved in it, should be injected, and the beast be made to walk about. When other ingredients are not at hand, four ounces of common salt, two of flour of mustard, and a quart of water, will make a very good drench for cattle. I have been informed by a gentleman on whose authority I can rely, that he has never failed to cure the blast by giving four ounces of carbonate of soda and a pint of castor oil; and as it is most probable that in this complaint an acid is formed, which, flowing into the fourth or sensitive stomach, causes considerable pain, there can be no doubt that the soda, by neutralizing it, must afford relief: but as flatulency is the proximate cause of the disturbance of the system, I should prefer giving some other alkaline preparation; as the alkaline carbonates, coming in contact with the acid in the stomach, generate a certain quantity of carbonic acid gas, which, of course, must add to the distention, and thereby aggravate the symptoms. As a means of preventing the blast, it may be remarked, that animals should never be turned into any piece of green succulent pasture while the dew is on the ground, or after rain. It has been observed that sheep are very liable to this complaint when there is a cold easterly wind; therefore, while this prevails, it will be advisable to fold them upon small patches of pasture, or to turn them into some close where the herbage is short and bare. Pigs are sometimes hoven or blasted by drinking too freely of sweet whey: the remedy is to pass a cane, with a wooden knob at the end, into the stomach; the preventive, not to give the whey till it is sour, and then in moderate quantities. See *White on Cattle Medicine*, chap. ii.

BLEEDING. This is certainly the most important

BLEEDING.

remedy in many of the diseases to which horses are subject; and in all cases where it is resorted to as a principal means of reducing inflammation, its success mainly depends upon the promptitude and freedom with which it is employed. The inflammatory disorders of the horse quickly run through their course; and if not speedily arrested, terminate in death, chronic inflammation, serous effusion, or some incurable affection. In cases of violent internal inflammation, indicating a necessity for bleeding, a large orifice should be made in the vein, through which the blood may flow with freedom; for it is observed that venesection is always more effectual when the blood is suddenly abstracted. The quantity to be drawn off must be determined by the symptoms and nature of the disorder. When a horse is bled because he rubs himself or appears to be thriving too fast, two quarts may be sufficient; but when phlebotomy is practised on account of internal inflammatory action, the proper guide is the effect produced on the horse: in all such cases he may be bled until he becomes faint; and if the symptoms do not abate, the operation must be repeated. The jugular or neck vein is the one most commonly opened. The approach of faintness is indicated by a soft weak pulse, by an alteration in the appearance of the eyes, by the animal becoming restless, trembling, and sweating, and by an increased motion of the flanks. When this is observed to take place, the bleeding must be stopped, by pinning up the vein with a sharp pin, which is to be wrapped round with a little tow bound in the form of a figure of eight, and to have the point pinched off with a pair of forceps. Should the horse reel and fall, the blood may be stopped by firm pressure on the vein above the orifice until the operator be ready to close the vessel. If the blood appear of a buff colour, and is of a hollow or cupped form, and firm, it is indicative of inflammation; and, for this reason, some veterinary surgeons first draw only a small quantity of blood, when, if it present the above-mentioned appearances, the bleeding is repeated with greater freedom. See *White's Farriery*, vol. i.

When horses are fed too liberally, and have not re-

BLEEDING.

gular exercise, they frequently require both bleeding and purging; the necessity of which is indicated by heaviness, an unusual redness of the membranes of the eye, and sometimes by want of appetite. In bleeding, however, we should always have regard to the age and constitution of our patient, the degree of work he has gone through, the season of the year, the state of the pulse, the habit of losing blood, &c. It may not be superfluous to notice one case, which came under my immediate observation, in which bleeding proved fatal. A horse was brought to be bled, merely because he had been used to it at that season of the year. I did not examine him minutely; and as the groom stated that there was nothing amiss with him, I directed a moderate quantity of blood to be drawn. About five pints were taken off; and while the operator was pinning up the orifice, the horse fell. He appeared to suffer much pain, and had considerable difficulty in breathing. In this state he remained about twelve hours, and then died. On examining the body, a red-coloured fluid was found both in the abdomen and thorax, but not in any considerable quantity; the lungs were in many parts of a dark red colour throughout; and in the pericardium, or heart-bag, there was rather more than a quart of red-coloured fluid. From these appearances, it is probable that the loss of a moderate quantity of blood caused a fatal interruption to the functions of the heart.

When a horse has been bruised considerably by a fall, kick, or otherwise, it is proper to bleed rather freely, and keep him on a cooling diet. I am inclined to believe, also, that if a horse has been over-ridden, as sometimes happens in a severe chase, copious bleeding, if immediately employed, is the most likely means of relieving him. I have been led to this opinion from having examined two horses that died from this cause. One of them, an impetuous irritable horse, died about two hours after he came into the stable; the other survived about thirty hours. In both, the lungs and right side of the heart were turgid with blood: in the latter the kidneys were highly inflamed, as well as the lungs and right side of the heart; but the bladder was sound and empty.

BLEEDING.

The most conspicuous symptom, however, in this case, was a painful and almost constant effort to stale, without being able to void more than a few drops. The first had a small quantity of blood drawn, and was drenched with cordials: the latter also was bled, and pretty freely; but not till inflammation had made considerable progress.

Bleeding may be either general or local. When general, it is the usual practice to open the jugular or neck vein; and in local bleeding, any vein near the seat of the complaint may be selected for operating on; as, for instance, the plate vein, or that which runs up the inside of the fore leg; the thigh or kidney vein, as it is sometimes termed; the angular vein, near the eye; the veins of the toe, &c. In some instances, an artery is opened instead of a vein: thus the temporal artery is frequently punctured; and I have known a farrier who was in the habit of opening the artery of the tail in all cases of apoplexy. A fleam is the instrument most commonly used for bleeding, but, in skilful hands, the lancet is preferable. Bleeding in the mouth is a favourite operation with some people, but, in my opinion, is never necessary. The vein may be found in the first bar or ridge of the mouth, in a line drawn upward from between the second and third front tooth. I have known a horse killed by the artery of the mouth being opened instead of the vein. Horses should never be bled low down in the neck, as, in so doing, there is a possibility of dividing the recurrent nerve which is distributed to the larynx or windpipe. I have seen wheezing and roaring, terminating in a few hours in death, occasioned by this accident. (See vol. iii. of *White's Farriery*, art. *Roaring*.) Sometimes, after bleeding, the vein inflames, and causes serious consequences. See *Veins*.

Cattle are generally bled in the neck vein, except in acute inflammation of the foot, termed Loo or Low, in which case they are sometimes bled in the toe. (See *White on Cattle Medicine*, art. *Bleeding*.) A cord is first tied round the lower part of the neck, in order to raise the vein, when it may be opened with a fleam or lancet. Oxen and cows are seldom so quiet under this operation as horses, and generally require to be held by the horns

BLE—BLI

and nostrils. The same quantity may be taken from them as from the horse: however, this must of course be regulated by the nature of the complaint, the pulse, &c. Pigs are generally bled by cutting the ears or tail; sheep and dogs are also bled in the same way; but, in these animals, I prefer opening the jugular vein, as a sufficient quantity of blood cannot otherwise be always obtained.

BLEIME. See *Corns*.

BLEMISH. A horse may be blemished without being unsound, as in the case of being broken-kneed or fired. When a person about to purchase a horse is unable to detect blemishes by his own experience, he should have a warranty specifying the horse in question to be free from blemish. See *Warranty*.

BLENDWATER, called also **MOREHOUGH**. A disease incident to black cattle, in which the liver is affected, according to old writers on farriery, who recommend, as a remedy, bole armoniac, charcoal powder, and the inner bark of the oak boiled in new milk.

BLENNORRHOEA, or **MATTERING OF THE YARD**. A mucous discharge from a stallion's yard, generally caused by covering too frequently. This disease generally soon ceases, when the animal is kept from mares, but may be more quickly stopped by washing the parts frequently with the following lotion, cold:

Acetate of lead, two drams.

Sulphate of zinc, two drams.

Water, one quart.

In obstinate cases it may be injected into the urethra, when it should be diluted with an equal quantity of water. The same remedy is applicable to mares that have a mucous discharge from the vagina. In all cases where inflammation is present, a moderate dose of physic should be given.

BLINDNESS. A defect frequently met with in horses (see *Eye*), and very generally occasioned by being kept in hot stables without exercise, and allowed more food than a horse in regular work.

BLISTERS. Blisters are stimulating applications, which inflame the skin, and raise the cuticle into small

BLISTERS.

bladders containing a watery fluid. Various substances are employed in the composition of blisters, but the ingredient in most general use is *cantharis*, or Spanish fly, now called *lytta vesicatoria*. They are, however, not unfrequently made of euphorbium, hellebore, corrosive sublimate, oil of origanum, oil of turpentine, &c. There are three different forms in which blisters may be used; namely, as an ointment, a liniment, and a tincture. The ointment is generally preferred, but the liquid blister is, by some practitioners, considered the best application for curbs, splents, spavins, and other exostoses. When a part is to be blistered, the hair should be cut close off, or even shaved off, and the skin, if scurfy, washed with soap and warm water; after which it must be thoroughly dried, and the preparation rubbed in for ten minutes. After applying a blister, the horse's head should be tied up to the rack, to prevent his rubbing the part with his nose; and, at the expiration of two or three days, he may be turned loose into a box or paddock, with a cradle round his neck. (See *Cradle*.) In about a week, it is usual to oil the blistered part, in order to make it free from stiffness; and in a fortnight after being blistered, the horse may be turned to grass. The hair will grow in about six weeks or two months. The following are the different formulæ for the composition of blisters.

Blistering Ointment:—

Oil of turpentine, three ounces.

Sulphuric acid, one ounce (by measure).

Mix them in the open air, in an earthen dish capable of containing a pint and a half. When the effervescence, or boiling, which ensues shall have ceased, add,

Melted hog's lard, one pound.

Cantharides, fresh-powdered, four ounces.

Oil of origanum, one ounce.

And continue to stir the mixture till it be cold.

Blistering Liniment:—

Olive oil, two ounces.

Oil of turpentine, six drams.

Oil of origanum, two drams.

Powdered cantharides, three drams. Mix.

BLOOD.

Blistering Tincture :—

Cantharides, in powder, one ounce.

Proof spirit, eight ounces. Mix.

To be kept in a well-corked bottle, and frequently shaken for two or three weeks, when it may be filtered through blotting-paper, and kept for use. This last mixture requires to be well rubbed in, and repeated the following day, if a proper effect be not produced by the first application. It may be made much stronger by dissolving in it from half a dram to a dram of corrosive sublimate.

When blisters are employed for the purpose of exciting action in a part, they are to be applied directly to that part ; but when used as counter-irritants, that is, for reducing inflammation, they are to be employed in the immediate neighbourhood of the inflamed part. See vol. ii. of *White's Farriery*.

Blood. The blood is a red fluid which circulates through the heart, lungs, veins, and arteries of the body. Its use is to generate heat, to nourish every part, and to supply all the secretions of the body which are separated from it. (For circulation of the blood, see *Heart*.) It is principally composed of a yellowish substance called *serum*, and a red-coloured mass, which may be distinguished into coagulable lymph, and the red globules or colouring matter. When blood has been drawn from a horse or other animal, it should be set aside for examination ; and if it be of a cupped or hollow form—if the serum, or buffy coat, remain on the surface—it denotes inflammatory action (see *Bleeding*) ; but if the whole mass, when coagulated, be of one uniform red colour, it indicates a healthy state of this fluid. The blood of a young and vigorous horse generally coagulates into a firm mass, while that of an old or debilitated horse is generally less dense, and more easily divided or broken down. When blood is found to be a long time ere it coagulates, to be soft in its consistence, and to present a thick coat of sily matter or serum, it is a sign of a weak habit of body, or, as it is often called, of poverty of blood ; and a horse in this state will frequently be found to swell about the hind legs, and to move with difficulty and re-

BLO—BOT

luctance. Such a disorder can only be cured by great attention to diet, exercise, &c. and by the occasional exhibition of such medicines as he appears to stand in need of. Tonics, diuretics, and occasionally gentle laxatives and alteratives, when necessary, may be advantageously administered; but these medicines, and indeed all others, although of benefit when judiciously employed, are absolute poisons in the hands of the ignorant.

BLOOD SPAVIN. See *Spavin*.

BLOODY FLUX. This disorder is one of rare occurrence; notwithstanding which, I have met with cattle that were affected with it from drinking at a pond containing a great quantity of reptiles. See *Dysentery*.

BLOODY URINE. See *Red Water*.

BLOW. See *Bruise*.

BLOWN. See *Blasting*.

BLUE OINTMENT. This is a mercurial preparation, and is sometimes used in cases of callous swellings or enlarged joints. It is likewise employed as a cure for the scab in sheep, and for the mange in dogs and other animals. See vol. ii. of *White's Farriery*.

BLUE STONE. *Sulphate of Copper*. An escharotic. See vol. ii. of *White's Farriery*.

BODY FOUNDER. See *Founder*, *Molten Grease*, and *Dysentery*.

BOG SPAVIN. See *Spavin*.

BOIL. An inflammatory swelling, generally terminating in suppuration.

BOLE. A name given to certain earths containing a portion of oxide of iron. It is sometimes serviceable as an application to ulcers discharging a thin, gleety matter.

BONES. These are described in the Explanation of the Frontispiece. See *Ring-bone*, *Splents*, *Spavin*, *Exostosis*.

BORAX. Sub-borate of Soda. A crystallized saline substance brought from India, and sometimes employed in veterinary medicine as an application to sore mouths. See vol. ii. of *White's Farriery*.

BORTS. Short reddish-coloured worms, often found attached to the horse's stomach. Mr. Bracey Clark has

BOTTS.

written an excellent paper on this subject, in the Transactions of the Linnean Society, from which the following is extracted. We must premise, however, that botts are not, properly speaking, worms, but the larvæ of the gad-fly, which deposits its eggs on a horse's coat in such a manner as that they shall be received into his stomach and there become botts. "When the female fly has been impregnated, and the eggs are sufficiently matured, she seeks among the horses a subject for her purpose, and approaching it on the wing, she holds her body nearly upright in the air, and her tail, which is lengthened for the purpose, carried inwards and upwards. In this way she approaches the part where she designs to deposit the egg, and suspending herself for a few seconds before it, suddenly darts upon it, and leaves the egg adhering to the hair by means of a glutinous liquor secreted with it. She then leaves the horse at a small distance, and prepares the second egg; and poising herself before the part, deposits it in the same way: the liquor dries, and the egg becomes firmly glued to the hair. This is repeated by various flies, till four or five hundred eggs are sometimes deposited on one horse. The inside of the knee is the part generally preferred by these flies for depositing their eggs, and next to that, the side and back part of the shoulder; and it is curious that these parts are most exposed to be licked by the animal: in licking, the eggs adhere to the tongue, and are carried into the horse's stomach with the saliva. The botts attach themselves to every part of the horse's stomach, but are usually more numerous about its farther orifice; and are sometimes, though less frequently, found in the bowels. Their number varies considerably: sometimes there are not above half a dozen; at others they exceed a hundred. They most usually hang in clusters, fixed by the small end to the inner coat of the stomach, to which they attach themselves by means of two hooks. The slowness of their growth and the purity of their food, which is probably the chyle, must occasion what they receive in a given time to be proportionably small; from which, perhaps, arises the extreme difficulty of destroying them by any medicine or poison thrown into

BOTTS.

the stomach. After opium had been administered to a horse labouring under locked jaw for a week, in doses of one ounce every day, botts were found in the stomach perfectly alive. Tobacco has been employed in much larger quantities in the same complaint, and has also been continued without destroying them." While making experiments on glanders, I have found living botts in the stomach of a horse, though he had been taking, for many days, arsenic and corrosive sublimate. Another species of gad-fly, viz. the *hæmorrhoidalis*, also produces eggs which, when received into the stomach, become botts of a red colour and smaller than those mentioned above. The presence of botts in the horse's stomach is not easily ascertained, as it is certain that great numbers have often been found in the stomach after death, without appearing to have produced any kind of inconvenience to the animal while alive. Several cases, however, have come under my notice, where they evidently caused the horse's death. In one case, symptoms of staggers were produced; in several others, inflammation of the lungs and the other thoracic viscera. Mr. Clark of Edinburgh has recorded one case where "the coats of the stomach were highly inflamed, and a mortification had taken place on one side, where it appeared of a darker colour; and here there was a small hole, through which a lead probe was passed from the outside into the cavity of the stomach." I have met with similar cases. It does not appear that any effectual remedy has been yet discovered for botts. Mr. Blaine says, that he has kept them alive for some days in olive oil, and in oil of turpentine, and that even the nitrous and sulphuric acids do not immediately destroy them. When botts are supposed to be irritating the stomach or intestines, it will be proper to give a dose of physic, as it may be the means of expelling such as are detached.

I am likewise of opinion that they may be very easily got rid of on first taking a horse from grass, by keeping him fasting during the night, and giving him, in the morning, about a pint of milk sweetened with honey; and, ten minutes after, four ounces of common salt in a quart of water. See vols. i. and iii. of *White's Farriery*,

BOWELS.

art. *Worms*.) Botts have by some been considered of service to horses with weak stomachs, as they tend by the irritation they produce to excite that viscus to action: indeed they have been recommended to be given as a stimulant instead of medicine; but such practice, I am convinced, is highly improper, as very many serious disorders have clearly been referred to their presence in the stomach. For my own part, I think I have been able to trace their connexion with staggers and other diseases of the brain; and if, as some authors would have us believe, they stimulate the stomach to action, they certainly must have an injurious effect upon the constitution, by exciting the animal to eat more than he can digest, thereby laying the foundation of almost every disorder to which the horse is subject. It is often very difficult to detect the presence of botts in the stomach; but as it is a very prevalent disease, it can never do harm to attempt to get rid of them in the manner I have recommended. At a certain season of the year, they detach themselves from the stomach, and pass off with the excrement, in order to become flies. When observed to be sticking about the fundament, their removal is best accelerated by doses of sweet oil, which, by some, has been considered as poisonous to these reptiles.

BOWELS. Intestines. The bowels of the horse are about thirty-four yards in length, and extremely capacious, especially those parts named *cæcum* and *colon*. They are divided into the large and small intestines: the former of which are subdivided into *duodenum*, *jejunum*, and *ileum*; and the latter into *cæcum* or blind gut (from its terminating in a *cul de sac*), *colon*, and *rectum*. The point where the small intestines terminate in the large is rather contracted, and acts as a valve, which prevents the food that has already passed into the large intestines from returning. It is here that obstruction sometimes takes place, by which air is confined in the stomach and small intestines, causing acute pain, and the disorder named Flatulent Colic. The colon is by far the most capacious of all the bowels, and in horses that eat a large quantity of hay, and drink as much

BOWELS.

water as they please, is sometimes found distended to an enormous size; thereby impeding respiration, determining blood to the brain, giving rise to flatulent colic and indigestion, and, in some instances, occasioning retention of urine. As the bowels are stretched beyond their natural capacity, they seem proportionably weakened and predisposed to flatulency; and hence it is that horses who have become broken-winded from indulging a voracious appetite are so frequently found to be subject to flatulent colic.

Inflammation of the bowels is a complaint to which horses are extremely liable: it is very often a consequence of flatulent colic, and is not uncommonly produced by administering too strong doses of physic, by giving purgatives without due preparation, or by want of proper care during their operation. The most conspicuous symptoms of this complaint are a quick pulse; redness of the inner surface of the eyelids; the great pain the animal appears to suffer; his lying down and soon rising up again; looking round at his flanks; endeavouring to strike his belly with his hind feet; great restlessness; coldness of the legs and ears; and sometimes profuse perspiration, occasioned by excessive pain. Inflammation of the bowels may be distinguished from flatulent colic by the quickness of the pulse, redness of the inner surface of the eyelid, and scanty high-coloured urine. (See *Colic*, vol. i. chap. xiv. of *White's Farriery*.) When inflammation has taken place in the bowels in a considerable degree, medical aid will avail but little; therefore we should be particularly attentive to those symptoms which indicate its approach and its commencement. In this, as in all other cases of internal inflammation, bleeding is the first remedy, and it must not be done sparingly. If the animal is costive, clysters and a dose of castor oil are proper; but if the bowels are loose, arrow-root or wheat-flour gruel should be given. The belly and sides are to be well rubbed with the mustard embrocation. (See *Mustard*.) The legs also may be stimulated by the same means. If this treatment fails of giving relief, and the pulse becomes quicker and difficult to be felt or numbered, there will

BOW—BOX

be no chance of the animal's recovery; but if he becomes easier, and the pulse slower and more distinctly to be felt, a favourable termination may be expected: it will be necessary, however, to allow only a moderate quantity of soft food, such as bran mashes, until he is perfectly recovered. A frequent cause of inflammation of the horse's bowels is immoderate purgation. It has been ascertained, that five drams of good aloes are, in general, a sufficient purging dose for a saddle-horse: need we wonder, then, that double this quantity, which is often given, should sometimes produce a violent and dangerous effect? In such cases it is not advisable to attempt to suppress the excessive evacuation by means of opium or cordials: a safer and more effectual method is to drench the animal frequently, if he refuse to drink it, with gruel made of arrow-root, starch, or wheat flour. He may be allowed to drink, also, decoction of rice: should this fail, about half an ounce of tincture of opium may be given twice or three times in the twenty-four hours. Inflammation of the bowels is sometimes attended with costiveness, both in horses and other animals. This is known by the dung being voided in small hard knobs, generally covered with slimy matter, sometimes mixed with blood. Here the first object is to procure an evacuation of the confined excrement by means of oily laxatives and clysters (see *Laxatives*); and as the disease is most commonly produced by what is termed a chill, that is, suddenly suppressed perspiration, and is accompanied by fever, other remedies are necessary. See *Chill*, *Molten Grease*, and *Dysentery*.

BOWEL-GALLED. A horse is said to be bowel-galled, when the girth frets and inflames the skin between the elbow of the fore leg and the ribs. The part should be washed frequently with a solution of acetate of lead (sugar of lead) in water, about one ounce to two quarts of water: and the proper application of a crupper will serve to prevent the recurrence of the complaint.

Box. The leaves of box are sometimes chopped fine, and given, mixed with common bran, as a cure for worms.

Box, Loose. A loose box, as it is generally called,

BRA

is a place wherein a horse is turned without being haltered to the manger or rack. It should have a door sawn through the middle horizontally, so that the upper portion may be left open for the admission of air. Many people are in the habit of turning horses into a loose box only when sick or very much fatigued, but it is the most fitting place for them at all times, especially when roomy, as they can then take a slight degree of exercise, which will always be found extremely beneficial, and prevent that puffiness of the heels to which some horses are so liable. Mr. James Turner has gone so far as, in a great measure, to attribute disease of the navicular bone to being constantly tied up in the stable.

BRACKSHAW, or BREAKSHAW. See *Dysentery*.

BRAIN. The connexion that exists between the brain and the stomach, by means of the eighth pair of nerves, or *par vagum*, is the cause of this important organ being often disturbed in its functions. Thus it is, that when the stomach is loaded with food, and the horse is taken out for work, he is found dull and languid, and sometimes symptoms of apoplexy are thus produced. I have known horses drop down in their work and die from this cause. The disease named stomach staggers depends entirely on a loaded stomach; but in this case the stomach is so distended, and the food has become so hard, that the digestive power is generally quite lost, or the stomach is completely paralysed, before any assistance can be given. (See *Staggers*.) In consequence of this nervous communication between the stomach and the brain, the latter organ is sometimes affected by the irritation of bots in the stomach. (See *Botts and Stomach*.) Hydrocephalus, or dropsy of the brain, is sometimes thus produced; but more commonly, I believe, by fast riding or driving, or violent exertion, at a time when the stomach contains too much food, and when the large bowels are loaded with excrement. When the stomach has been enlarged by an habitual indulgence in excessive feeding, and the bowels have been stretched, in consequence, by the large quantity of excrement and water they have to contain, the brain is liable to be effected in two ways; first by the distention

BRAIN.

of those parts injuring their muscular and nervous structure, and secondly by the impediment which it forms to the animal's breathing. In the treatment, therefore, of diseases of the brain, such as apoplexy, megrims, vertigo or giddiness, epilepsy or fits, staggers, &c., it is not only necessary to bleed copiously, in order to afford immediate relief, but to empty the bowels, also, by a dose of physic and clysters. Having accomplished this, the next object is to prevent a recurrence of the disorder by strict attention to the horse's diet and exercise. (See *Diet, Feeding, Food, and Exercise*. Likewise vol. i. of *White's Farriery*.) In all diseases of the brain, topical applications may be used with advantage; such as a rowel under the jaws, a large seton under the forelock, and blistering the poll and forehead. The brain is sometimes affected simply by a redundancy of blood in the system, especially when it is impelled or determined to the head by violent exercise, or by drawing heavy burdens. In such a case bleeding alone would effect a cure, and a spare and opening diet afterwards would prevent a recurrence of the disorder. Most commonly, however, there is at the same time a disordered state of the stomach and bowels; the excessive quantity of blood being the result of over-feeding and want of exercise. In France and Germany a sort of shower-bath is employed in some diseases of the brain. (See *Baths, Apoplexy, Vertigo, and Staggers*.) Inflammation of the brain is indicated by violent delirium, redness of the membranes of the eye, and strong pulsation of the temporal arteries: the animal often becomes quite furious, so that it is dangerous during the paroxysm for any one to approach him: after a little time, he generally becomes quiet, and sometimes lies down, apparently in a dying state: the delirium, however, returns, and he becomes more violent perhaps than at first. In this way the animal sometimes continues one, two, or even three days, when suppuration takes place in the brain, nature becomes exhausted, and death puts a period to his suffering. I have often had occasion to remark, that in all cases of internal inflammation, copious and early bleeding is the grand, the essential remedy.

BRAIN.

In this case, however, it is, if possible, more particularly necessary; and the most ready way of obtaining a speedy and sufficient evacuation is by opening both temporal arteries, and allowing them to bleed until the animal becomes perfectly quiet, or even faint. If this cannot be accomplished, both jugular veins should be opened, and the bleeding continued by tying a cord round the neck so tight as to keep up a constant flow of blood from both orifices; but the cord should never be applied until the veins have been opened. (See *Bleeding*.) To prevent a recurrence of the disease, a dose of physic should be given; and it will be necessary, for some time afterwards, to feed him rather sparingly, principally with bran mashes or green food.

Dropsy of the Brain does not often occur to horses or cows, but sheep appear to be more liable to the disease than other quadrupeds. The symptoms of the disorder in horses are variable. In one case there was a considerable degree of dulness and heaviness about the head; the pulse was not much affected, but there was loss of appetite. The animal appeared as if suffering much pain in the head, generally keeping it lower than the manger. These symptoms were followed by delirium, convulsions, and death. In another case, where probably the water had accumulated very gradually in the cavities of the brain, the horse appeared to be free from pain, except when put suddenly into brisk motion, when he would fall down in violent spasms: the fit seldom lasted above a few minutes. This horse, being of scarcely any value, was destroyed, and, upon examining the brain, about six ounces of water were found in its ventricles or cavities. In the treatment of this complaint, Mr. Blaine recommends diuretics and mercury, with a view to procure an absorption of the accumulated fluid. Perhaps, in an early stage of the complaint, a strong mercurial purgative, assisted by a blister to the head, and a rowel between the branches of the under jaw, may remove the disorder; but at any later period there does not appear to be any chance of a cure. Sir George Mackenzie has described two kinds of this disease, which sometimes happen to sheep: the first consists of an accumulation

BRAXY.

of water in the ventricles of the brain, which is considered to be incurable; the other, which is most common, arises from animalculæ, called hydatids. In this case, the water is contained in cysts or bags unconnected with the brain, on which, however, if not prevented, it acts fatally by pressure. Very soon after water has begun to collect, either in the ventricles or cysts, the animal shows evident and decisive symptoms of the disease. It frequently starts, looks giddy and confused, as if at a loss what to do. It retires from the flock, and sometimes exhibits a very affecting spectacle of misery. Various methods of relieving the pressure of the brain have been proposed, and, when put in practice by patient and skilful hands, most of them have succeeded; but a method has been found of perforating the cyst, which has succeeded perfectly in numberless instances: this operation consists in "thrusting a piece of wire or a knitting-needle up the nostrils, and forcing it through the skull into the brain." (*A Treatise on Sheep, by Sir George Mackenzie.*) The brain is subject to other diseases, which do not appear, upon dissection, to depend upon any alteration in its structure, upon inflammation, or upon an accumulation of water in its cavities. See *Epilepsy, Giddiness, and Megrimis.*

BRAXY, or SICKNESS. A complaint very common among sheep; in Scotland, it is termed *watery braxy*: some writers describe also a dry and a costive braxy. The former is said to depend upon a retention of urine, caused by feeding too freely on succulent diuretic food, and resting too long in their lairs in the morning. The disease, therefore, may be prevented by avoiding too free a use of such food, and by moving them from their pens early in the morning, in order to encourage them to pass their urine. All diuretic medicines are of course highly improper in this complaint. The costive braxy is said to be produced by eating hard dry food, drinking cold water when the body is over-heated, or being plunged into water while in that state, or suddenly drenched with rain, or chilled by a shower of snow. In this kind of braxy, a dose of salts (about two or three ounces), clysters, and bleeding, are the proper remedies.

BRA—BRE

The dry braxy appears to be an inflammatory affection, particularly of the bowels, for which bleeding, castor oil, and clysters, are suitable remedies.

BRAN. Fresh sweet bran is excellent food for sick horses, and may be given with advantage to all horses that have but little exercise; but, being of a laxative quality, is improper, in any great quantity, for such as are hard worked. It is the very best sort of food for horses that are broken-winded, asthmatic, or affected with chronic cough; but, at the same time, they should be allowed oats in proportion to their work, and but a small quantity of hay. Bran is more frequently given in the form of mashes than dry: it is probably most nutritious and easy of digestion when scalded with boiling water. Poultices are sometimes made of it. See *Poultice*.

BREAD. Bread made of bean and wheat, oat, or barley flour, was formerly given to horses in training for hunting or racing, but is now never used for that purpose.

BREAK. A species of carriage for breaking horses into harness. When used for two or more horses, it is generally nothing more than a common coach without its body; in other words, that part technically denominated the *carriage*. A high gig is commonly made use of for breaking horses to single harness.

BREAK. A kind of machine erected for the purpose of securing horses when about to be operated on. It is sometimes called a trevis.

BREAKING. The breaking-in of young horses is a matter of great importance, and should never be intrusted to any one of a harsh cruel disposition, or a violent hasty temper; as, under such a master, the very best-tempered horse may be rendered surly and vicious, or at best timid and given to shying. In England horses are at present broke at much too early an age: we daily find them racing before they are three years old, and in constant work before four. This, I am persuaded, is a chief cause of the numbers of contracted feet met with at the present day, and the consequent cases of lameness that are continually presenting them-

BREAKING.

selves to our notice. Farmers in general put their colts to moderate work at three years old ; and although I admit that the exercise they are thus forced to take may accelerate their growth and improve their constitution, yet this advantage is more than counter-balanced by their being shod at a period when the foot is still growing, and by the frequent strains and sudden exertions they endure when fresh at their work. Formerly, horses were never even handled before four years old, broke when coming five, and not put to real labour before rising six. However, I am no advocate for letting a colt have his own way entirely until four years old, as many a one proves very unmanageable at that age, which, had he been handled sooner, might have become extremely tractable.

At three years old, a colt may have a halter put on him for a few days when turned to grass, in order to accustom him to it ; after which he may be led about every day, and handled in all sorts of ways, that is, have his feet taken up, be rubbed with a hay or straw whip, &c. The next thing is to put the saddle and bridle on, and afterwards the dumb jockey (See *Dumb Jockey*); which may be done in the stable, where he may be left, loosely tied up, for some hours every day, until he be no longer averse to wearing them. No violence or force of any kind should ever be used with a young horse ; much more may be gained by coaxing and kindness. Having been led out daily, so as to become familiarized with objects before new to him, he may be returned to his paddock ; taking care every now and then to repeat his lesson, which he will seldom forget. The first thing to be done in breaking a horse, after having rendered him perfectly quiet by the means detailed above, is to fasten a long rope to the nose-strap of his head-piece, and, having put a large snaffle-bit (see *Bit*) in his mouth, and fastened the reins to the dumb jockey, to make him move round in a circle, first in a walk, then a trot, and lastly a canter, in order to teach him his paces. His head should be a little inclined towards the breaker, by shortening the inner side rein. It may here be remarked, that some people are in the habit of reining a

BREAKING.

young horse's head up very tight and high to the cross-trees or dumb jockey, in order to give him more lofty action ; but this should never be done to excess, as they are very apt to be thrown down, or made to cut, when their natural action is much altered. Besides, the effect seldom lasts long, unless the rider is subsequently very attentive to this particular. When he has thoroughly learnt his paces, he may be backed; and it is a good practice to place some boy or light weight upon him at first, so that the difference between him and the dumb jockey may not be very perceptible, while a man leads him about until he become accustomed and obedient to the action of the hand and leg. (See *Riding*.) After this he should be ridden daily with a great deal of care, frequently coaxed and caressed, and by degrees brought to pass carriages, and other objects he may meet, without fear. Should he, as he invariably will show symptoms of fright on beholding any thing new, he must never be beaten; but brought to approach it by kind means, and made to smell at it, after which he will ever remember and disregard it; but, on the other hand, should punishment and force be used, the remembrance of the whip will, on every similar occasion, cause him to start and fly about, in the expectation of a second chastisement. When horses are vicious or ungovernable, the best mode of conquering them is to put them on the bit, as it is termed, that is, to rein their head in toward the chest, and suffer them to stand in the stable in this position for a certain time every day. Horses intended for harness must always be previously broken to saddle-work; after which they may be accustomed to wear harness for some days, and may then be put into a break (see *Break*) with a strong steady horse, able to pull them along in spite of themselves. There are generally two men employed in breaking a young horse to harness; one who drives, and another whose business it is to run by the horse, and seize him should he prove restive. Where a double break and another horse are not to be procured, it is a good plan first to harness the horse to be broken to a log of wood, to which he should be attached by long traces. In this way he

BRE

seldom can do himself any mischief, and is soon taught to draw.

BREAKING DOWN. An accident that often happens in racing, hunting, and other violent exercises. It is caused by a rupture either of the suspensory ligament of the perforans tendon, of the suspensory ligament of the fetlock joint, or of the ligament which sustains the two pastern bones in their situation. The first thing to be done is to bleed freely, and then, after having approximated the ends of the ruptured ligament as much as possible, to bind up the fetlock joint with a long flannel roller, about three inches wide and four or five yards long. It should first be made thoroughly wet with a lotion composed of one ounce of sugar of lead dissolved in half a pint of vinegar and a quart of water. The bandage must be applied firmly, beginning as low down as possible, and carried several times above and below the fetlock joint in order to give it support; after which it must be bound round the leg all the way up the back sinews, and kept constantly moistened with the lotion already specified. The bowels should be opened by clysters and a mild dose of physic, and a little nitre should be given in a mash. For two or three weeks the horse should not be moved, but, at the expiration of that time, he may be turned into a loose box until he be free from lameness; and then it will be advisable to put a charge or strengthening plaster on his leg, and turn him out to grass for a short time. Should the lameness not appear benefited by rest, firing is the only remedy to be employed. See *Firing* and *Charge*.

BREAST-PLATE. An article in horse-furniture to prevent light-carcased horses from running through their girths, as it is termed. It is made either of leather or spring web, lies upon the horse's shoulders, and is fastened, after passing between the fore legs, by putting one of the girths through a loop made to receive it, and by buckling its upper part to the saddle-trees under the upper flap, just behind the horse's withers. It is generally used in hunting, to prevent the saddle from slipping back when galloping up hill.

E

BREEDING.

BREEDING. The choice of a sire and dam is a point of the utmost consequence in breeding horses (or indeed any other animal), as the offspring will be found, in almost every instance, to inherit the good or ill qualities of its parents; for which reason a stallion and mare, as free from defects as possible, should invariably be selected for the purposes of breeding; and where any bad point exists in the one, it should be corrected in the other, by which precautions alone will the risk of obtaining an ill-proportioned or unsound progeny be avoided. It has been remarked, that the properties of the sire are more likely to be transmitted to the offspring than those of the dam, on which account the greatest care and the most careful discrimination are requisite in the choice of a stallion. A clear bright eye, perfectly free from specks on the cornea, or incipient amaurosis (see *Eye*, and vols. i. and iii. of *White's Farriery*); a clean, muscular, and sinewy leg; a perfectly well-formed and tough hoof; a deep girth, not narrowing towards the stifle; close joints; broad fore-hand; a shoulder well laid back (for such as have an upright shoulder are liable to fall in galloping); a broad loin; rather straight back; raised withers; tail set high in the quarter; an airy neck; open nostrils; firm action; and good temper;—such are the principal points to be considered in the election of a stallion, and if the mare possess them in a like degree, the chances are that the foal or filly will be similarly gifted; but, should any glaring defect exist in either sire or dam, it is probable that their offspring will inherit it; in support of which opinion I shall relate two circumstances, the truth of which is indisputable. Some years ago, Lord King had a gray covering stallion, at his seat near Ripley in Surry, of uncommon beauty, but unfortunately blind. However, the symmetry of his form procured him several mares, and he got a great many colts, all of whom, by their fourth year, were either blind, or exhibited symptoms of approaching cæcity. Mr. Roberts, of South Molton, being requested to examine an entire horse, found that he had *two* curbs; and his sister being in the same stable, he was induced to inspect her, when he found that she also had

BRI—BRO

two curbs. Knowing the stock they came from, and that the sire was free from these defects, he was led to examine the dam; when he not only discovered that she had *two* curbs, but that a colt of hers by another horse had *two* curbs also. These facts tend to enforce the necessity of breeding from a healthy sound sire and dam, and not, as is too frequently done, from foundered, broken-winded horses and mares, whose progeny will seldom, if ever, repay the expense of rearing. It may here be observed, that all animals have a tendency to breed one generation back, and that therefore a very ill-proportioned horse, if got by a well-formed sire, may get well-formed colts, as has been frequently proved; but this is a circumstance not to be relied on.

BRIDLE. Different kinds of bridles are employed, according to the mouth or temper of the horse. For a good mouth, a plain snaffle is the best; but a hard-mouthed horse will at times require the curb, in which case the double bridle, or snaffle and curb, is the best. See *Bit*.

BRIDLE HAND. The left is called the bridle hand, in contradistinction to the right, which is termed the whip hand.

BRIMSTONE. See *Sulphur*.

BROKEN KNEES. After washing the wound well with warm water, apply to it some tincture of Myrrh or Friar's Balsam. If the wound and inflammation be considerable, bleed freely and put a poultice on it. A dose of physic may likewise be given, and the bowels be kept open by bran mash. When the inflammation has subsided, the wound should be washed two or three times a day with a solution of blue vitriol; and a mixture of finely powdered alum and pipe-clay, made with water into a thin paste like cream, may afterwards be applied, and renewed every two or three days. The best ointment for bringing on the hair is a mixture of camphorated mercurial ointment and ivory black or gunpowder. Tallow and tar would answer the same purpose. The knee is sometimes so wounded that the skin forms a flap opening downwards. In this case it is by far the best plan to cut off the flap as close to the

BROKEN WIND.

sound parts as possible; and this, so far from increasing the blemish, will be the means of lessening it, and greatly expedite the cure, as in the horse it is impossible to make such a loose piece of bruised flesh adhere by the first intention to the sound parts. When mild stimulating applications are employed, and the wound does not seem to heal, the following ointment may be used:

Ointment of yellow rosin, four ounces.

Oil of turpentine, two drams.

Red precipitate, finely powdered, half an ounce.—Mix.

Should the new flesh arise above the surface of the surrounding skin, sprinkle on it some finely powdered burnt alum. In slight cases of broken knee, it will be sufficient to wash the part frequently with a cold solution of acetate of lead, in the proportion of an ounce of sugar of lead to a quart of water; and when the swelling and inflammation are removed, the camphorated mercurial ointment may be used for the purpose of accelerating the growth of hair.

BROKEN WIND. This disorder is nearly similar to asthma in the human frame, but is occasioned by different causes. The origin of broken wind is a morbid secretion from the mucous membrane lining the larynx, the windpipe and its innumerable ramifications; and this morbid secretion of mucus is gradually brought on by improper feeding, exposure to cold or damp, &c. When a horse is in the habit of eating a large quantity of hay, it not only oppresses the stomach and bowels, and consequently the organs of respiration, but likewise impoverishes the blood, and weakens the muscular and nervous systems. When the body is in this state, if the horse be forced into any violent exertion, the air-vessels may be burst, and the lungs become emphysematous. (See *Emphysema*.) When mucus is formed within the lungs, their capacity for air must be diminished; and this may tend, as much as bad feeding, to deteriorate the blood. (See *Lungs*.) As soon as the air escapes, by the rupture of the air-vessels, into the cellular substance, or common connecting membrane,

BROKEN WIND.

the bulk of the lungs is greatly increased, while its capacity for containing air is diminished, on account of the compression exercised upon the air-vessels by the extravasated wind. The effort made by the abdominal muscles to squeeze the air from the lungs condenses that which has escaped into the cellular membrane, the elasticity of which forces the muscles, after being drawn up in an unusual degree, to fall down suddenly, with a sort of jerk at first, and afterwards more gradually; and this (which by the French is called breathing *en deux tems*) is considered a sure sign of broken wind. According to Mr. Richard Lawrence, "the most common appearance of the lungs in broken-winded horses is a general thickening of their substance, by which their elasticity is in a great measure destroyed, and their weight specifically increased, at the same time that their capacity for receiving air is diminished." I have examined the lungs of broken-winded horses without observing this general thickening of their substance; on the contrary, they have appeared specifically lighter and larger than in the natural state. I particularly examined two horses that were purchased for the purpose of making experiments, and so badly broken-winded as to be useless. In the first, the lungs were unusually large, and there was evidently a considerable quantity of air in the cellular membrane; but it was not ascertained whether this air had escaped from the air-cells, or had been generated within the common cellular membrane of the lungs. The other horse was kept about a month in a field where there was no water and very little grass. When taken up, he appeared perfectly free from the disorder: he was however shot, and upon examining the lungs they had not the slightest appearance of disease. About twelve months ago, I purchased a horse completely broken-winded: he had been for a considerable time the property of a gentleman who valued him highly, but his wind became so bad as to render him useless, therefore he was sold. The purchaser, finding him incapable of working after a short trial, was glad to get rid of him for a small sum. He then fell into my hands. By allowing him only a small quantity of

BROKEN WIND.

hay sprinkled with water, giving cold bran mashes, mixed with a moderate quantity of oats, and only a small quantity of water, taking care at the same time that he had regular but moderate exercise, his wind became gradually better, and at this time he appears perfectly free from the complaint. These cases, with several of a similar kind I have met with, seem to prove, that broken wind does not always depend on an alteration or disease in the structure of the lungs, but upon some morbid secretion in the branches of the windpipe or air-cells, or perhaps from their becoming emphysematous. See *Emphysema*.

It is stated in Rees's Cyclopædia, under the head Broken Wind, "that after opening more than ten broken-winded horses, the lungs were uniformly found emphysematous." This complaint is generally allowed to be incurable; but it may often be alleviated, and sometimes in such a degree as to be scarcely perceptible. Constant attention, however, is necessary, with regard to food, &c. which should be rather of an opening kind, such as bran mashes, with a quantity of oats proportioned to the horse's work: green food may also be given in moderate quantity, or carrots. When ridden, his exercise should at first be moderate, and he should not be taken out immediately after feeding. I have seen small doses of diuretic medicine, given daily, or every other day, for a short time, so as to increase the horse's urine in a moderate degree, afford great relief: such medicines, however, must not be given so as to cause and keep up excessive staling, as the kidneys might thereby be injured. Horses that have but indifferent appetites, either for hay or water, should be allowed green food; but in broken wind this is not often the case: more commonly they have an almost constant thirst, and, unless prevented by a muzzle, will eat even their litter. As far as my observation goes, this disease most commonly happens to horses that have such voracious appetites: whenever, therefore, this is observed, the horse should be limited in his diet; and if he shows any disposition to eat his litter, a muzzle must be employed. See *Cough*, *Wind*, and *Asthma*.

BRO—BRU

BRONCHIA. See *Windpipe*.

BRONCHOTOMY. The operation of opening the windpipe, for the purpose of removing any thing that may have lodged in its upper part or larynx; or of making a passage for air to the lungs, when the natural passage is obstructed by inflammation and swelling of the throat, as in very severe cases of strangles. An incision is made in the front of the neck, about four or five inches below the top of the windpipe; and when this is laid bare, one of its cartilaginous rings is to be divided, and a piece cut out, so as to make a sufficient opening for introducing a probang. (See *Probang*.) If it is suspected that oats, bran, or any other substance, is sticking in the top of the windpipe, the probang is to be passed up, and suddenly withdrawn again. If the natural passage be choked up by inflammation and swelling, it is sufficient to make an opening in the windpipe; the introduction of the probang is not necessary. In either case, the opening in the windpipe must remain until the inflammation in the throat has subsided; for when oats, bran, or masticated hay has been sticking about the larynx, or top of the windpipe, it soon brings on a high degree of inflammation. The relief, therefore, afforded by the operation, is not immediately complete in either case; but the inflammation produced by any foreign substance quickly subsides after its removal. I once saved by this operation the life of a horse that was nearly suffocated by oats, or probably by only a single oat, sticking in the top of the windpipe. I found there was no occasion for keeping a tube in the opening to afford a free passage to the air, after cutting out a piece of the cartilage or gristle. When the natural passage is sufficiently restored, the skin over the open cartilage must be sewn up. The wound will heal in three or four weeks.

BRUISES. In severe bruises, the best thing is to foment or poultice, and bleed freely. Give a dose of opening medicine, and keep the body cool by bran mashes. In cases of slight bruises, goulard lotion, or the following mixture, will be sufficient to remove the inflammation and swelling:

BUB—BUL

Muriate of ammonia, 2 drams.

Vinegar, 2 oz.

Spirit of wine, 2 oz.—Mix.

Should matter form, it is to be treated as an abscess; but if a hard callous swelling remain, an attempt should be made to disperse it, by rubbing it well with some stimulating embrocation, such as,—

Soap liniment, four ounces.

Liquid ammonia, one ounce.

Or,

Camphor,
Oil of origanum, } of each two drams.

Olive oil, two ounces.

Liquid ammonia, one ounce.—Mix.

Should these embrocations fail, recourse must be had to a blister. See *Treatise on Veterinary Medicine*, vol. ii.

BUBO. A glandular swelling. See *Farcy, Strangles, and Glanders*.

BUCK EYES. A term used by dealers and jockeys for bad eyes. A horse, for instance, that has a speck upon the pupil of the eye, or any mark of having had bad eyes, is termed a *buck-eyed* horse.

BUCKTHORN. The juice of the buckthorn berry was formerly much used in medicine as a purgative, and farriers often employed it. Its effect, however, is so very inconsiderable in the horse, that it is now rarely if ever used, even in the composition of purging balls.

BUFF. A name commonly given to that yellowish jelly which is found on the surface of blood that has been drawn from an animal labouring under an inflammatory disorder. This gelatinous coat, in proportion to its thickness, pretty accurately denotes the degree of general inflammation that exists, and its appearance indicates the necessity of further bleeding. It is also named *size*, and blood with this appearance is said to be *sizy*. In fact, it consists of the coagulable lymph of the blood, from which the red particles or colouring matter have prematurely subsided. See *Blood*.

BULL, to make Cows take. A mischievous practice

BUL—BUR

has been recommended by old Markham, and copied by Clater and Skerrett, of giving for this purpose half an ounce of Spanish flies, with grains of paradise, &c. Surely common sense should dictate to every one, that the only safe and effectual method of accomplishing this end is to bring the animal to a perfect state of health and condition.

BULL, Burnt. A local disease affecting the sheath of the bull, which, upon being drawn, will be found inflamed and ulcerated. In order to examine the part, the bull must be thrown and placed on his back. The yard is then to be gently drawn out of the sheath, and well bathed with the following lotion:

Powdered sulphate of zinc (white vitriol), four ounces.

Powdered acetate of lead (sugar of lead), six ounces.
Water, one gallon.

These are to be well shaken together, and filtered through blotting paper. When this cannot be conveniently done, let the mixture stand for some time, and the clear part may be poured off for use. By washing the part three or four times, and sometimes only once, with this lotion, a cure will generally be effected; but should it fail of healing the ulcers, let each of them be carefully touched with lunar caustic, previous to the whole being washed with the lotion. It is said that the passage of a cow is sometimes affected in the same way; in which case the part may be syringed with the same lotion.

BURGUNDY PITCH. A resinous substance procured from some kind of fir. It is used in the composition of plasters and charges.

BURNS or SCALDS. In slight cases it is sufficient to wash the part frequently with cold goulard lotion; but in more serious accidents of this kind it is proper to bleed also.

Gibson mentions the case of a horse that was dreadfully burnt by the explosion of gunpowder: he succeeded in curing him by bleeding, giving clysters and nitre with mashies, and washing the parts with a lotion composed of "two ounces of crude sal ammoniac dissolved in one quart of water. When the solution was complete,

BURSÆ MUCOSÆ.

one quart of spirit of wine was gradually added. With this the sores were bathed several times a day, which brought them to digest, and a great deal of the burnt skin came off; but in the end he got well without any considerable blemish."

BURSÆ MUCOSÆ. Mucous bags or sacs. These are described as membranous sacs, containing a fluid similar to synovia or joint oil, and interposed between tendons and the parts on which they move. I cannot find any thing of the kind in the horse's limbs; but wherever a tendon has to move, or slide upon a part, there is provision for secreting synovia, as well as for confining it to the part where it is wanted. There is a large bursa at the point of the shoulder, where the great tendon of the biceps muscle moves upon the large grooved process at the head of the shoulder bone. If this be laid open and examined, it will be found to be a large synovial cavity, bounded above and below by vascular membranes, which appear to me not only to confine the synovia to the part where it is wanted, but to secrete it also. Another bursa is found at the elbow; a third behind the knee, extending some way downward; a fourth where the tendon passes over the sesamoid bones; a fifth at the back and higher part of the small pastern; a sixth between the tendon and the nut bone or *navicula*. (See *Plate*.) In the hind limb, the first bursa is at the stifle; the second on the inside of the hock; the third at the cap of the hock; the fourth at the part where curbs happen; the fifth at the back part of the fetlock joint; the sixth at the upper and back part of the small pastern; and the seventh at the navicula or nut bone. According to Mr. Percival, "the bursæ mucosæ are small membranous sacs containing fluid, and interposed between certain parts moveable upon such other to facilitate motion. They may be considered as appendages to muscles, or rather their tendons; for it is between tendons, and the parts over which they pass, that we *commonly* find them: hence they exist in great numbers in the extremities." The bursæ are not subject to variety, either in regard to number or situation; they are invariably the same in those respects, like joints or other parts, and have not,

BUR—CAL

as some writers have stated, any communication with joints. In violent exertions, these vascular membranes, which secrete and confine the synovia, are injured: hence we have windgalls, curbs, bog spavins, thoroughpins, &c. See these articles, and vols. i. and iii. of *White's Farriery*.

BURSTENNESS. See *Rupture*.

BUTTER OF ANTIMONY, *Muriate of Antimony*. A powerful liquid caustic, often used by farriers in the cure of quittor, canker, fistula, pollevil, &c. It is decomposed by water, and should therefore always be used alone.

BUTTERIS. An instrument used by farriers for paring the horse's hoofs. See *Shoeing*.

C.

CABBAGE-TREE BARK. As this is a powerful anthelmintic in the human body, it may be worth a trial on the horse. The requisite dose, in all probability, would be from three to four drams.

CACHEXY. A term now seldom used. It implies a vitiated state of the solids and fluids of the body.

CÆCUM. The blind gut; so named, because it is open at one end only. In the horse this part of the intestines is remarkably large, and is generally the first part that presents itself on opening the abdomen of a dead horse. See *Intestines*.

CALAMINE, or CALAMINARIS. An ore of zinc, which, after being roasted or calcined and finely powdered, has been used as a drying or healing application to ulcers. It is the principal ingredient in the celebrated Turner's cerate, and has been employed also in the composition of eye-waters.

CALCULUS. See *Stone*.

CALF, Diseases of. The diseases of calves originate almost always in a disordered state of the stomach, either from taking too much milk at a time, or from the milk not being sufficiently fresh, or being taken from a bad udder. There appears to be something naturally formed in the calf's stomach, by which the milk is coagulated. Whenever the stomach is disordered, either by the quantity or quality of the milk, this coagulating property becomes stronger, so as to form

CALF.

hard indigestible curds which nearly resemble new cheese. This causes a variety of disorders, such as scouring, want of appetite, costiveness, colic, inflammation of the bowels, convulsions, or *cords*, as it is named in Scotland, that is, contractions of the limbs and belly. Give the following medicine, and be careful in feeding. A little gruel made of arrow-root, or fine wheat flour, is useful when there is scouring; and oatmeal gruel, bran tea, or whey, if the bowels are rather confined. If the acidity of stomach continues, a little powdered chalk or lime water may be given; or, if the bowels are confined, a little carbonate of soda or magnesia.

Drench for Calves:—

Take of Epsom or Glauber's salt, two to four ounces.

Water, one pint.

Castor oil, two to four ounces.

Carbonate of soda, one to two drams.—Mix for one dose.

If the calf scours, and especially if he appear to be griped, or have colic pains, add to this drench a tablespoonful of anodyne carminative tincture, the receipt for which may be seen under that head. After calves are weaned, and more particularly when they are about one year old, they are subject to inflammatory disorders, and therefore require to be kept in bare pasture or poor land, where they may work hard for their living. Were this plan universally adopted, we should hear no more of that destructive disorder named Quarter Evil. (See *Quarter Evil*.) It is said that calves are sometimes affected with that disorder to which sheep are so liable, named Gid, Giddiness, or Hydrocephalus, caused by an hydatid or bladder in the brain. I have never seen a case of this kind; but if I found a calf affected with vertigo or giddiness, or any disorder of the head, I should prescribe bleeding and purging. Clysters, as well as opening medicine, are sometimes useful in relieving calves from obstinate costiveness: the best thing for a clyster is a quart or two of warm water with two or three ounces of common salt dissolved in it. The clyster pipe should be about seven or eight inches long.

CALF, Rearing of. Calves that are intended for rearing should fall between Candlemas and May, for in that season the cows' milk may be best spared. By

CALKINS.

that time, too, there will be sufficient grass to wean the calves; and by the winter following they will have sufficient strength to preserve themselves from being hurt among other cattle, if they have now and then some little help. By June, too, the dams will be readier to take the bull. If a cow goes till after May before she calves, the calf will be too weak the winter following, and the cow will not be so ready to take the bull again, but often goes barren. Besides, to rear a calf after Michaelmas, and to keep the dam at her meat, as they do in some countries, would be expensive in the winter time; and a cow at grass, though there is but little for her to eat, will give more milk, than with fodder, and lying in a house or a stall. Those that have small pastures had better sell their calves than rear them. It is far better to wean calves at grass, than at hard meat. The weaning the calves with hay and water will distend their bellies, and they will be more apt to rot when they come to grass. In winter they should have shelter, as young animals are not able to bear severe weather.

CALKINS, or CALKERS. The heel of the shoe when turned up in order to prevent the horse from slipping. This is necessary in the hind shoes of draught horses, and in those of saddle-horses used as hunters. Draught horses, and especially those fed on grains or malt dust, are apt to have a mangy or itching humour about the legs, which, on being closely examined, are found to contain lice crawling about them close to the skin. This makes them scratch one leg with the foot of another, and, in scratching the front of the pastern with the heel of the shoe, they often inflict severe wounds. When horses, therefore, are observed to be stamping with the hind feet, and rubbing one hind leg with the other, or with the foot, the calkins of the shoe should have the angles and edges filed off; and to destroy the lice, and put a stop to the itching, let the following wash be applied:

Take, Corrosive sublimate, one dram.

Muriatic acid, three drams.

Tobacco water, one quart.

Oil of turpentine, four ounces.—Mix.

CAL

This should be carefully applied, so as to reach every part of the skin, from the hocks to the feet.

Should the itching continue after this has been fairly tried, let the following liniment be rubbed in :

Oil of turpentine and oil of tar, of each four ounces.

Train oil, eight ounces.

Sulphur vivum, finely powdered, four ounces.—Mix.

In saddle-horses, it is usual to turn up or calk the outside heel only, in order to avoid the danger of *treads*, that is, stepping one foot upon another. This is a bad method, as it throws the foot a little on one side, and tends to produce lameness. Whenever it is thought necessary to turn up the outer heel only, the inner quarter of the shoe should be gradually thickened, so that the extremity may be as high as the opposite calkin.

CALLOUS. This term in farriery is applied to hard indolent swellings, such as that which often remains after a severe strain of the back sinews. A swelling of the knee, in consequence of falling, sometimes continues after the inflammation that produced it has subsided : it is then free from tenderness and unusual heat, and is said to have become callous. Various means have been proposed for dispersing such swellings, such as camphorated mercurial ointment, oil of origanum, &c. ; but nothing is so likely to prove effectual as blistering, which may be repeated twice or three times if found necessary, taking care that the effect of one is quite gone before another is applied ; and this may be more readily accomplished by washing the blistered part frequently with cold goulard water, beginning three or four days after the application of the blister. In callous swellings about the back sinews, firing is the best remedy.

CALOMEL. A well-known and very useful preparation of quicksilver or mercury. It is used as an alterative and as a purgative : for the latter purpose it is generally joined with aloës, ginger, and soap ; when given as an alterative, it may be mixed with a small cordial ball. Calomel is an excellent remedy for worms ; for which purpose it is either given alone for three or four successive nights, and then worked off by a common dose of physic, or joined with a sufficient quantity of aloës, &c.

CALVING.

to act at once as a purgative. As an alternative, the dose of calomel is from one to two scruples; as a purgative, joined with aloës, from one to two drams. When given to destroy worms, and repeated for three or four days, the usual dose is about a dram. When employed alone as a purgative, it has been given to the extent of half an ounce; but this has been seldom done, and perhaps there are but few cases in which it would be deemed prudent to venture on so large a dose.

CALVING. At the end of nine lunar months the period of a cow's gestation is complete, but parturition does not always take place exactly at the end of this time: it is sometimes earlier, at others later. One hundred and sixteen cows had their time of calving registered: 14 of them calved from the 241st to the 266th day, that is, from 8 months and 1 day to 8 months and 26 days; 3 on the 270th day; 56 from the 270th to the 280th day; 18 from the 280th to the 290th day; 20 on the 300th day; 5 on the 308th day: consequently there were 67 days between the two extremes. About a fortnight or three weeks before calving, what is termed springing takes place. The space then between the shape and the udder becomes redder than usual, the udder enlarges, and the ligaments or joinings of the bones, named couples, on each side the rump, are by degrees giving way, till a yielding or something like a separation of them can be felt. When these appearances show themselves, the cow is at her full time, and should be narrowly watched, as she may be hourly expected to calve. Immediately before calving, the animal appears uneasy; the tail is elevated; she shifts about from place to place, and is frequently lying down and getting up again. The labour-pains then come on, and by the contraction of the womb the foetus with the membrane enveloping it are pushed forward. At first the membranes appear beyond the shape as a bladder of water: this soon bursts, and after the water is discharged, the head and fore feet of the calf are protruded beyond the shape. The body next appears, and the delivery is complete. In a little time afterwards, some trifling pains take place, which separate

CALVING.

the after-birth or cleansings; and these being expelled, the process is finished. Such is the usual course of what may be termed a natural calving, and the time of it seldom exceeds two hours; sometimes, however, it is protracted to five or six, or longer. When the water-bladder breaks early in calving, and before the mouth of the uterus is sufficiently expanded, the process is often slow, and it is a considerable time before any part of the calf makes its appearance. In such cases, it is necessary to introduce the hand and lay hold of the fore legs, and bring them gradually, as the pains and natural forcings occur, into the vagina or passage, by which means the delivery is soon accomplished: such interference, however, should be carefully avoided until it is really necessary. The practice of driving the animal about when symptoms of calving appear is very improper: it is erroneously supposed to facilitate and hasten the process, but has been known, in many instances, to cause the animal's death. It happens more frequently with the cow than with any other animal, that the calf, instead of presenting in the usual way, that is, with the head and fore feet, is so situated in the uterus that calving is rendered difficult, and sometimes impracticable, without assistance. In such cases, it is necessary to introduce the hand, in order to ascertain the position of the calf, and change it when it is found unfavourable. When, for example, the head presents, without the fore legs, which are bent under the breast, it cannot in this position be drawn away without endangering the life of the animal. In this case, the calf is to be pushed back in the uterus, placing the cow in the most favourable situation for that purpose, and taking the opportunity for so doing when there are no pains or straining. When the calf is pushed back, the fore legs are to be carefully drawn forward in a line with the head, and brought out into the vagina. It may be necessary then, especially when the calf is unusually large, or when the passage of the cow is comparatively small, as is sometimes the case the first time of calving, to place cords round the feet and under jaw, and, whenever the pains occur, to assist nature in gra-

CALVING.

dually extracting the calf. On some occasions, considerable force has been found necessary for this purpose, and no ill consequence has ensued from it: but it should be recollected, that nature is never to be interfered with in the process of delivery, unless it be clearly ascertained that assistance is necessary. The preternatural positions of the calf, which at times occur, are various, and have been well described by Mr. Skerrett in his *Treatise on the Parturition and Diseases of the Cow*, from which the above account has been in great measure taken. Cases of difficult calving sometimes occur, where it has been found impossible to put back the calf into the womb, in order to turn it, until the cow has been made to stand so that the hind shall be considerably higher than the fore parts, and I have heard of one case where it could not be accomplished until the cow was cast and placed on her back, and the hind legs drawn up with a pulley fastened to a beam. In all cases of difficult calving, the animal is more or less exhausted, and requires repose on a large quantity of dry litter. When much force is used in drawing the calf, and especially if the animal be rather fat, inflammation of the womb is apt to follow, and, when this occurs, it generally proves fatal. Great mischief is often done by endeavouring to extract the calf by mere force, without any regard to its position in the uterus: it is sometimes so placed that delivery is not practicable by any means. I have seen a heifer that it was found impossible to deliver: on examining her after death, a very large calf was found lying quite across the mouth of the uterus. Instances sometimes occur of the calf's head appearing only, and so large that it is found impossible to put it back. When this is found to be the case, the calf should be killed, and carefully extracted, by cutting off the head and other parts that prevent the extraction: thus the cow's life will be saved. When much force has been used in drawing the calf, it sometimes happens that the womb falls out or is inverted; and great care is required in putting it back, so that it may remain in its situation. In so doing there is an advantage derived from placing the cow in such a

CAL—CAN

position that the hind may be higher than the fore parts. If any dust or straw be observed about the womb, they should be carefully removed; and if the placenta or after-birth still adhere, it must be carefully and gently separated before any attempt is made to put back the womb. A linen cloth is to be put under the womb, which is to be held by two assistants. The cow should be made to rise, that being the most favourable position, and the operator is then to grasp the mouth of the womb with both hands, which will enable him, by gently pushing it forward, to force that part into the body of the cow. When so returned, one hand is to be immediately withdrawn, while the other remains to prevent that part from falling down again. The hand at liberty is then to grasp another portion of the womb, which is to be forced into the body like the former, and retained with one hand. This is to be repeated until the whole of the womb be put back.

CALX. See *Lime*.

CAMPHOR. This medicine is employed both internally and externally. It is given inwardly as an antispasmodic, as in locked jaw, when it is commonly joined with opium; and as a febrifuge, or fever medicine, joined with nitre and antimonial powder. The dose is from one to two drams. For outward applications it is mixed with, or rather dissolved in, either spirit of wine, oil of turpentine, or sweet oil and liquid ammonia: with either of these, with the last four conjointly, or by itself, it forms a good stimulating embrocation.

CANADA BALSAM. See *Balsam*.

CANCER. There is no disease, I believe, incident to horses or other domestic animals, which at all resembles the cancer of the human body. Gibson, however, has described cases which he supposed to be cancerous, that occurred to horses affected with farcy and glanders: he speaks also of cancers arising in consequence of rowels being placed in glandular parts, and of cancerous warts. I have seen such cases as Gibson has described, but cannot conceive that they bore any resemblance to the disease named cancer in the human body. See *Farcy*, *Warts*, and *Sinus*.

CAN

CANELLA ALBA, or WINTER'S BARK. A pleasant aromatic stimulant, that may be employed as a tonic. The dose, two, three, or four drams. One part of powdered canella, with five parts of aloës, form the old purging powder named *Hiera Picra*. It yields by distillation a heavy oil, which is sometimes used to adulterate oil of cloves, but it does not materially injure it.

CANKER. An obstinate and often incurable disease of the horse's foot. It generally originates in a neglected thrush, which spreads from the fleshy or sensible frog to the fleshy or sensible sole, and from thence to the elastic membranes or *laminæ*, and other parts of the foot. It is seldom attended to until the ligaments or coffin bone are affected. The first thing to be done is to cut away freely all the horn by which any diseased part is covered; and it is better to cut away too much than too little. Some farriers draw the sole, as it is termed, and this is the practice adopted, I believe, by the French; but if the whole of the bottom of the foot be closely pared, almost to the quick, and all the diseased parts exposed by cutting away the horn which covers them, this painful operation is not necessary. The diseased parts consist of spongy fetid flesh, or imperfect horn, sticking out like shreds of leather, which must be entirely cut away, and the bleeding stopped by pledgets of tow firmly bound on. Before the tow is applied, let the whole of the diseased parts be sprinkled or covered with finely powdered blue vitriol. The dressing is most effectually kept on by a wide hollow shoe, which should be fastened with three or four nails only, as it will be necessary to remove it daily to dress the foot. The following day the shoe should be taken off and the foot carefully examined with a probe, and if any bone be found bare, which may be easily felt with the probe, it may be concluded that such portion of the bone is diseased or carious, and should therefore be scraped with a rougine, a drawing knife, or other convenient instrument. All the diseased parts of the sensible foot should be scraped off carefully, and if any hollow place be found in the horn, it must be carefully cut away: finely powdered blue vitriol may be again sprinkled on the foot. After having carefully examined,

CANKER.

pared, and dressed the foot daily in this manner for four or five days, some milder dressing will be proper, such as one of the following preparations. Blue vitriol is as effectual for the first dressings as any thing, but farriers often employ stronger caustics, such as butter of antimony, oil of vitriol, aqua fortis, &c. Pressure is an essential part of the treatment; for which purpose the foot should be well filled with tow firmly kept in by thin transverse slips of iron, or slips of wood.

Caustic Preparations for Canker:—

1. Blue vitriol finely powdered.
2. Butter of antimony.
3. Nitrous acid, two ounces; and red precipitate, one ounce.
4. Verdigris and aqua fortis.

Mild Preparations for Canker:—

1. Tar, four ounces; finely powdered blue vitriol, one ounce.—Mix by melting the tar.
2. Egyptiacum, or liniment of verdigris, two ounces; nitrous acid, twenty drops.—Mix.

Mr. Blaine recommends a solution of lunar caustic, one dram to two ounces of water; or blue vitriol, alum, and white lead, of each one ounce, finely powdered, and sprinkled on the part. He then advises firm but regular pressure on the whole surface, by means of tow, keeping it on by narrow plates of thin iron placed across each other, having their ends under the shoe; for it must be remembered, he says, that firm permanent pressure is the only thing to be depended upon, when the exuberant or fungous part has been removed. According to Mr. Feron, in his *New System of Farriery*, "tar and vitriolic acid mixed together make a real specific for canker as well as thrushes;—or take powdered verdigris, one pound and a half; burnt alum, half a pound; red lead, half a pound; treacle, four pounds; nitrous acid, one ounce: boil the whole to a proper consistence, and when cold add the nitrous acid." It is necessary to dress a canker every day, examining the foot carefully each time, and removing any horn that may be found covering a diseased surface. In inveterate cases the strongest caustics may be employed with advantage, until the cankered parts be-

CANKER.

gin to look more healthy, and the offensive smell has been corrected. The sulphuric and nitrous acids have been used undiluted with good effect; but these powerful caustics must be applied carefully, and to such parts only as are in a foul cankered state. Butter of antimony is a useful caustic for this purpose: powdered sublimate, red precipitate, and burnt alum have also been recommended. When the canker appearance and smell have been corrected, milder dressings are proper; such as,
Friar's balsam, two ounces.
Sublimate, one scruple.

Or,

Tar, four ounces.

Sulphuric acid, two drams.

Oxen and sheep are liable to a disease similar to canker, which sometimes appears between the claws of the divided hoof; at others it exists in only one of the claws, appearing by a crack in the sole or crust, from which a fetid discharge first issues, a luxuriant fungus then forms, and the disease ends in the loss of the claw. If there be only a discharge, Mr. Blaine advises the application of astringents; and if a fungus has formed, the opening is to be enlarged, and the excrescence removed. After this, he directs a hard pledget of lint, sprinkled with powdered blue vitriol and alum, to be applied exactly within the edges of the wound, and firmly bound on the part: this is to remain three days, and then, if no fungus appear, a pledget of lint only is to be applied.

CANKER in the Mouth. This is generally an ulceration of the gums, between the tushes and the first grinder, and is occasioned by an improper use of the bit. See *Bit*, and *Mouth, Diseases of*.

CANKER of the Ears, in Dogs. A troublesome ulceration of the extremities of the ears, causing the dog to be almost constantly shaking them. Mr. Blaine prescribes the following ointment, carefully securing the ears after its application:

Ointment of nitrated quicksilver, and Turner's cerate, of each equal parts, to be well mixed and applied once a day.

CAN

Or,

Corrosive sublimate, finely powdered, three grains.

Turner's cerate, one dram.

Milk of sulphur, one scruple.—Mix.

Probably lunar caustic, and securing the ears afterwards, would be as good an application as any.

Canker sometimes happens on the internal part of the dog's ear, causing him to be frequently scratching it, and sometimes howling, from the intolerable itching it occasions. It is often a companion of mange, and frequently attacks water-dogs. It arises from a gross or bad habit of body, and requires attention to the animal's diet, which should consist, in part, of oatmeal. A dose of physic should be given, and afterwards some alteratives. Mr. Blaine recommends a wash composed of half a dram of sugar of lead, twenty grains of white vitriol, and four ounces of rose water; or a decoction of oak bark; or a little verdigris mixed with oil: if these are found to fail, a solution of ten grains of corrosive sublimate in four ounces of water may be tried. See *Mange*, and *Dogs, Diseases of*, in vol. iv. of *White's Farriery*.

CANON BONE, or SHANK BONE. The bone between the knee and fetlock joint of the fore leg, and the hock and fetlock joint of the hind leg.

CANTHARIDES. Spanish flies. *Lytta Vesicatoria*. *Cantharis Vesicatoria*. This is an essential ingredient in all blistering preparations. Spanish flies are found on the leaves of the privet, ash, elder, lilac, white poplar, and the tartarian honeysuckle, in Spain, Italy, France, and, to a certain extent, all over Europe. They are caught by smoking with brimstone the trees on which they are found, and catching them on a cloth spread underneath. They are then killed by the steam of boiling vinegar, and afterwards dried in a stove. Cantharides are generally mixed with dusty matter, and should therefore be sifted before they are powdered. The fresher the powder the better. (See *Blisters*.) Tincture of cantharides is prescribed in cases of incontinence of urine: it is said also to have been given with success mixed with alum in the red water of cows. (See *Red Water*, and vol. iv. of *White's Farriery*.) Mr. B. Clarke prescribes seven

CANTHARIDES.

grains of cantharides in a tonic drink, with sulphate of zinc and a little allspice. I have some doubt of its possessing this property, and do not feel inclined to try it, as we have an abundance of good cordials and tonics in our materia medica. (See *Cordials* and *Tonics*.) I was once induced to try cantharides upon an emaciated horse that could not by any means be got into condition: he was considered of no value, and therefore given up as a subject for experiments. We began with two drams of powdered cantharides, formed into a ball with flour and syrup: this did not produce any sensible effect. We then gave him half an ounce, which acted moderately on the kidneys. After a short interval, we gave him six drams, which had also a diuretic effect, but did not affect the appetite, nor cause any irritation of the urinary organs. No more was afterwards given; but a week or two afterwards the horse was turned to grass, and, at the end of two months, he was taken up in good health and condition. I attribute this horse's recovery entirely to the run at grass, which is a better restorative than any our materia medica can furnish. Some time after this, I gave two glandered horses one dram of powdered cantharides each, which irritated the bladder considerably, but only for a short time. I have not since had any inclination to give cantharides, except the tincture in incontinence of urine. I am inclined to believe that cantharides are liable to be absorbed and produce dangerous effects when blistering ointment is used for large rowels. I once saw a case of this kind: the rowel, smeared with blistering ointment, was placed in the chest, and, in the course of a day or two, produced an enormous swelling, suppression of urine, and partial paralysis of the hind parts. The horse died, and the kidneys were found in a dreadfully diseased state. It seems probable, from the foregoing experiments, that cantharides are not readily absorbed from the stomach and bowels, and should therefore be given in the form of tincture, which is made by digesting two drams of powdered cantharides in a pint of proof spirit. Two ounces of this tincture are commonly given to a cow at one dose. To a horse I would give two or three drams. See *Urine, Incontinence of*.

CAP—CAR

CAPELET. A wen on the elbow, caused, probably, by repeated bruises in lying down. When they are inflamed and tender, they should be bathed frequently with cold goulard water—one ounce of Goulard's extract to one quart of water. If they feel soft, and appear to contain a fluid, let them be opened, and the part afterwards dressed with solution of blue vitriol for a few days. If they occasion much inconvenience, the best method is to dissect them out. I once dispersed a wen completely with the emetic tartar blister.

CAPIVI, BALSAM OF. Diuretic and carminative. The dose, one or two ounces. See *Balsam*, and vol. ii. of *White's Farriery*.

CAPPED HOCK. A swelling on the point of the horse's hock, generally occasioned by blows in kicking. They seldom cause lameness; but, as they are a considerable blemish, an attempt should be made to reduce the swelling by blistering. However, I have frequently seen blisters employed without doing any good; but, in the last case of the kind I treated, I think the swelling was lessened by them. Friction with camphorated mercurial ointment may be tried previous to blistering. The emetic tartar blister may also be of service.

CAPSICUM. A powerful stimulant, which may probably be of use in indigestion, or that loss of power in the stomach on which stomach staggers depends. It is given in small doses as a cordial.

CAPSULAR LIGAMENT. The ligament by which the ends of two bones are joined together. It forms a complete sac round them, and serves to confine the synovia or joint oil. See *Joints*.

CARAWAY-SEEDS. These are cordial and carminative: the dose from one to two ounces.

CARBON. Pure charcoal. A charcoal poultice has been recommended in the disease named *grease*, in order to correct the fœtor attending it.

CARBONATES. Combinations of alkalies, earths, or metallic oxides, with carbonic acid; as carbonate of potash, of lime, of lead, &c.

CARCINOMA. Cancer. See *Cancer*.

CARDAMOM-SEEDS, *greater and lesser.* The greater cardamoms are named Grains of Paradise, and are com-

CAR

monly given to cattle as a stimulant or cordial. The lesser cardamoms are brought home in small dry pods, and have, in addition to their stimulating or cordial property, an agreeable odour and taste. See vol. ii. of *White's Farriery*.

CARDIACS. See *Cordials*.

CARDIALGIA. Heart-burn. We have no means, I believe, of determining whether or not horses are subject to this disorder. Horses have sometimes a disposition to eat earth, which may be an indication of heart-burn. When this is observed, give a mild dose of physic, and keep the horse on an opening diet of bran and oats, with only a small quantity of hay. Should the disposition to eat earth continue, give a little soda, chalk, or magnesia, in his food or water. See vol. iv. of *White's Farriery*, art. *Meadow-sickness*.

CARDITIS. Inflammation of the heart. See *Heart*.

CARDUUS BENEDICTUS. Blessed Thistle. A bitter aromatic plant, which may be useful as a tonic.

CARIES. Ulceration or rottenness of a bone. This may always be distinguished in probing by the peculiar sensation which the probe gives to the finger and thumb when it touches a bare bone. In fistula of the withers, and poll evil, the bones are often thus affected. I have often met with a caries of that part of the under jaw next the tush, in consequence of the improper pressure of the bit. A carious bone should be scraped with a rougine, a drawing knife, or other convenient instrument. After this has been properly done, the wound will heal of its own accord; but it may be better to dress it with tincture of myrrh, or a solution of blue vitriol.

CARMINATIVES. Medicines which correct flatulency, or expel wind from the stomach and bowels. The principal medicines of this class are the essential oils, ginger, spirit, such as gin or brandy, and opium. See *Colic*, *Flatulent*, and vol. ii. of *White's Farriery*.

CAROTID ARTERY. A large artery that runs down on each side of the neck near the windpipe. A large nerve accompanies it. The jugular vein runs immediately over this artery and nerve. At the upper part of the neck they are at such a distance that there is no

F

CAR—CAS

danger of wounding them in bleeding ; but, lower down, they are nearer, and may be wounded by striking in the fleam with violence. See *Bleeding*.

CARROTS. See *Daucus*.

CARTILAGE. Gristle. A smooth, elastic, and insensible substance attached to bones. Cartilages are situated in parts where elasticity is required ; as in the foot, breast, and ribs, nose, ears, and windpipe. There are also inter-articular cartilages ; that is, flat smooth cartilages between the ends of two bones. These, being covered with synovia or joint oil, serve to facilitate the motion of the joint. Cartilages are covered by a delicate membrane named *perichondrium*.

CASCARILLA. Bark. A strong aromatic bitter, often employed as a tonic and stomachic. The dose, two or three drams.

CASSIA. A strong aromatic stimulant, similar to cinnamon, for which it may be substituted. See vol. ii. of *White's Farriery*.

CASTING, or throwing down a horse or bullock. The mode of throwing down a horse has been minutely described, and illustrated by a plate, in the third volume of the author's *Farriery*. The method of throwing down a bullock is different. Take a long rope, double it, and tie a knot about a yard from the end, so as to form a bow or collar, which must be placed round the neck close down to the shoulders. The two ends of the rope are now to be passed between the fore and hind legs, and then to be brought round each hind leg, from within outward, under the fetlock joint, and passed under the bow. A man is to stand on each side with a rope, and, by drawing it up quickly, bring the hind legs so much under the belly that the animal must of necessity fall down. He is then to be kept down by kneeling on his neck.

CASTOR. A substance taken from the beaver. We find it prescribed in old books on farriery, especially by Gibson. In convulsions, he directs half an ounce to be given, mixed with other medicines. I do not think it possesses much medicinal power over the horse.

CASTOR OIL. A good purgative, but sometimes un-

CASTRATION.

certain in its action. The dose is from half a pint to a pint. See vol. ii of *White's Farriery*.

CASTRATION, CUTTING, or GELDING. An operation often performed on horses and other domestic animals. The best time for gelding colts is when they are one year old; and the common method of performing it, by means of the clams and the firing-irons, is, I believe, as safe and as little painful as any. Some practitioners separate the spermatic artery, and secure it with a ligature; which has a more surgical appearance, and is said to be less painful and dangerous. In India, the cord is placed between two slips of wood covered with sublimate ointment: the slips are then bound firmly together. The testicle is not cut off till the next day, and then there is no bleeding. This is considered the best method, and was introduced by Mr. Morecroft. Before this time, castration in India was often followed by locked jaw; an accident which, since this method of operating has been adopted, very rarely happens. I have tied the whole cord, and the horse did well; but still I prefer the old method of operating; for, after castrating in this manner a great number of all ages, and at all times of the year, I have never lost one patient. As soon as a colt is castrated, he should be turned to grass, unless the season of the year be unfavourable. I have never applied any kind of dressing to the sore; but if the flies get about it, some common oil, or train oil, may be useful. It sometimes happens that considerable swelling takes place three or four days after the operation. If this do not subside in a week, the swelling should be scarified with a horse-lancet; plunging it in to the depth of a quarter of an inch, or more, in several places, but always in the most dependent parts of the swelling. For an account of the operation, and the mode of securing a horse previous to castration, consult the first and third volumes of the author's *Farriery or Veterinary Medicine*. I wish, however, to add, that, a few days since, I castrated three horses, one of them five years old, the two others aged: each of them had covered about an hour before the operation, which was performed in the manner pointed out in the above volume. No dressing was applied; they

CAT

were not even cleaned ; but the next morning they were turned to grass, and no further notice taken of them. In about a week they appeared to be quite well, except a little discharge from the wound. In this case, the operation was performed under the most unfavourable circumstances, and in the middle of August.

CATALEPSY. Lafosse, and other French veterinary writers, describe a disease which they name *Immobilité*, and which, they say, resembles the catalepsy of the human body. Lafosse, in his *Dictionnaire d'Hippiatrique*, says, "It is astonishing that no veterinary writer has hitherto noticed this disorder (*immobilité*); a malady known to all farriers and horse-dealers, and considered as one that makes a horse unsound in law." It appears, from his description, to be a disorder of the brain and nervous system, something like what is called megrims by the farriers of this country. Such disorders are greatly aggravated by high feeding and violent exertion. A loaded state of the bowels tends to throw blood towards the head, especially during fast exercise: such horses, therefore, should be always confined to a small quantity of hay, and have their bowels kept rather lax by bran mashes. At the time of the attack, bleed freely, and give a dose of physic, joined with some cordial. Exercise and moderate feeding are the best preventives of this disease.

CATAPLASM, OR POULTICE. This application, when designed to promote suppuration in a swelling, or remove inflammation occasioned by a blow, is best made by mixing together three parts of fine bran and one part of linseed meal ; pouring a sufficient quantity of boiling water upon the mixture to bring it to the consistence of a thin paste, and confining it to the part in such a way that no swelling shall be caused by the bandages. A poultice should always be renewed once in twelve hours ; for when it approaches towards dryness, it tends rather to aggravate than remove the disease for which it has been employed. In the accidents which usually occur to horses, there is generally some difficulty found in securing poultices, without making so much pressure by the bandages employed as to cause swelling, and thus

CATARACT.

rather defeat than promote the intention for which they are used: on all such occasions, it is better to trust to a frequent application of warm water, or any thing in the form of fomentation; such as a decoction of herbs, or other ingredients commonly employed for the purpose. One thing should always be observed in the application of poultices; that is, the method by which they are fastened. Perhaps there is nothing better for the purpose, in diseases of the lower parts of the limbs, where they are most commonly required, than a worsted stocking kept up by list or flannel bandage.

CATARACT. An incurable disease of the horse's eye. I call this disease incurable, because, though we can, as is often done in the human subject, remove it by an operation, such an imperfection of sight would remain, as to render the horse more dangerous to ride than if he were quite blind. Some reasons, however, may be adduced for occasionally attempting the removal of cataract, but I fear that any attempt of the kind would generally prove fruitless. A cataract may be partial or total. The partial cataract is known by specks in the pupil or apple of the eye, which interrupt vision in proportion to their size and according to their situation. In the total or complete cataract, the whole of the apple of the eye becomes of a white or pearl colour, sometimes inclining to yellow. A horse's sight is least injured by partial cataract, when the speck is most remote from the centre of the pupil, and near to the upper margin; for the horse has more occasion to look on the surface of the earth, and in a line parallel to the centre of the pupil, than upward. When a complete cataract takes place in one eye, the strength of the other becomes almost always permanently established. The horse, likewise, gradually acquires a habit of accommodating himself to the loss of an eye, so that he becomes almost as useful as when he had two good eyes, and better than he would have been with two imperfect eyes. This may be considered as a wonderful provision in the economy of the animal; for when we observe how frequent the disease is among horses, owing to the immoderate work they do at an early age, and the improper manner in which they

CATARRH.

are generally fed and kept, it will appear that it is much better to have the nervous energy distributed to one eye, and the other quite dark, than to have two eyes with weak and imperfect sight. The partial cataract generally remains without alteration during the horse's life; but this is by no means so certain a sign of permanently established strength in the other eye, as when there is a complete cataract. Whenever, therefore, a horse is seen with a partial cataract in one eye, and the other apparently healthy, the healthy eye may be considered as being more liable to disease than it otherwise would be.

I cannot, however, dismiss this article without observing, that the *partial* cataract sometimes met with, in which there are only one or more small opaque spots in the pupil, so situated as not to prevent materially the admission of light to the retina, is not of so much consequence as it is often supposed to be. As the eye is so important an organ in the horse, so liable to injury, and when diseased renders him so useless, indeed we may say dangerous, to the rider, the subject will be more amply treated of in another part. See *Eye*, and vols. i. and iii. of *White's Farriery*.

CATARRH, or COLD. This is, perhaps, a disorder more common in horses than any other, and happens more frequently to them than to any other animal. It is caused by exposure to wet or cold, without exercise, after being heated; and sometimes even by a current of air blowing into the stable. Horses accustomed to warm clothing and warm stables are, of course, most liable to cold. Such horses are often affected by standing in a damp stable. The symptoms are cough; dulness; want of appetite; heaviness of, and sometimes running from the eyes; discharge from the nostrils, frequently accompanied by sore throat and difficulty of swallowing. These symptoms exist in various degrees, from a slight cold to the epidemic catarrh, influenza, or distemper. The epidemic catarrh is so named from its spreading over a country, and prevailing as a general disorder, often for a considerable time, and most commonly in the spring and summer. When the disease is so prevalent, it is either infectious, or dependent on a certain state of the air. From its

CATARRH.

generally going through a stable, and attacking one horse after another, it is most probably infectious or contagious, and should therefore be guarded against by separating a horse from his companions on the first appearance of the disease. The violence, or rather the degree, of the disorder depends greatly on the state of the animal at the time of the attack. If he be fat and plethoric, or too full of blood, and kept in a hot stable, there will be a distressing cough, considerable fever, and sometimes quickness of breathing, with other symptoms denoting approaching or actual inflammation of the lungs. The pulse is frequent; the inner surface of the eyelids, and the inside of the nostrils, redder than usual; the throat sore, causing pain and difficulty in swallowing, and sometimes a total inability to eat or drink, though, at the same time, the horse appears to have some appetite. The first thing to be done, and the earlier it is done the more effectual will it be, is to bleed largely, or until the horse becomes faint. He should then be put into a cool stable, or a loose box, where he can move himself about. If the weather be favourable, he may be turned into a paddock; and the best food that can be given him is young tender grass; but when this cannot be had, he must have bran mashes. It is often necessary to repeat the bleeding, perhaps two or three times: the propriety of this is indicated by a continuance of the inflammatory symptoms; such as the quick pulse, redness of the inner surface of the eyelids, and quickness of breathing. When there is difficulty of swallowing, the throat should be blistered: a vesicatory may also be applied to the sides, provided the quickness of breathing continue. The bowels should be opened by clysters; and when the horse is kept in a stable, and no grass can be procured for him, bran mashes, containing an ounce of nitre, should be given twice or three times a day. When the throat is sore, it is improper to attempt giving balls or drenches. Mr. Wilkinson, in his *Treatise on Locked Jaw and Catarrhal Disorders*, directs, in the latter, a hard but tough chewing ball to be placed between the grinders. This may increase the secretion of saliva, and assist the return of blood from the head; as may be observed by making a

CAT

horse chew while we are bleeding him. Steaming the head with hot bran mash is likewise useful; and when there is a considerable discharge from the nostrils, they should be cleansed by sponging them several times a day. The manger also should be kept clean. In slight colds, a little bleeding, with bran mash and nitre, will generally be found sufficient to effect a cure. Mr. Coleman first introduced the practice of turning horses into a field or paddock in inflammation of the lungs, whether catarrhal or peripneumonic. Breathing cool air is of great use, and there is nothing that aggravates the disorder so much as hot close stables. In this, as on many other occasions, we are too much influenced by prejudice, and do not see the case in its true light, from want of reflection. Because the disease is contracted by exposure to cold, it seems to follow that it must be proper to keep the animal warm, and give stimulating medicine. However proper this may be in the human body, it is not so in the horse: on the contrary, cool air, bleeding, cooling medicines, and a cooling diet, are the most proper. The horse should be treated very carefully after the disease appears to have been, in a great measure, removed; for, if neglected, it may return, and a chronic cough be the consequence of such indiscretion.

CATECHU, commonly called *Terra Japonica* or Japan Earth, but improperly, as it is the inspissated juice, or extract, made from a tree which grows in Hindostan, and named *acacia catechu*. Catechu is a powerful astringent, and very efficacious in the disorder of cattle named Scouring or Scantering. It may be given with advantage, also, to other animals labouring under a similar disorder. The dose, from two to four drams, joined with ginger, allspice, and powdered caraways.

CATHARTICS. Medicines that cause purging. They are sometimes called purgatives or aperients; but, in horse-medicine, the familiar term for a cathartic ball is *physic*. (See *Physic* and *Balls*.) Aloës is the principal veterinary cathartic medicine, and that aloës brought from Barbadoes is the best. (See *Aloës*). I have tried all the cathartic drugs which are employed in human medicine, and find that none of them except aloës have any con-

CATHETER.

siderable effect upon the horse. (See vol. ii. of *White's Farriery*, articles *Scammony*, *Gamboge*, *Elaterium*, *Jalap*, *Bitter Apple*, and the celebrated *Croton Oil*.) If calomel (now named submuriate of mercury) be given with aloës, its purgative effect will be considerably increased; but it should be recollected that, unless great care be taken of the horse, there is danger in giving mercurial cathartics; and that, if they are of such strength as to purge the horse longer than one day, or a day and night at farthest, they do harm. Mild cathartics are on many occasions exceedingly useful; and in those epidemic catarrhs which often happen in the spring, even the neutral salts, such as sulphate of soda (Glauber's salt) and sulphate of magnesia (Epsom salt), will often do more good than stronger medicine. These mild cathartics are commonly named *laxatives*. (See *Laxatives* and *Purgatives*.) It has been said by writers on human medicine, that a combination of several cathartics will operate better than any single cathartic: whether this be the case with horses has not, I believe, been determined. Ancient farriers generally mixed jalap with aloës in their cathartic balls; and I have been told that it is a useful ingredient, especially when Barbadoes aloës cannot be obtained, and we are obliged to use Cape aloës. It has been thought, also, that gamboge would be a useful addition on such occasions; but, after a few trials, I am inclined to believe there is no ground for this opinion. See vol. ii. of *White's Farriery*, or the *Veterinary Materia Medica*.

CATHETER. A curved tube, which is passed through the urethra or urinary passage of the human subject into the bladder, for the purpose of drawing off the urine. An instrument of this kind would be of no use in veterinary practice, on account of the great length and acute curvature of the passage near the horse's bladder. Whenever there is occasion to draw off a horse's urine, a long smooth piece of whalebone is to be passed up through the urethra, until it arrives at the place where the urethra makes this sudden turn; that is, a few inches from the fundament. An incision is to be made down upon the point of the whalebone, and through this opening a catheter

CAU—CEL

can be easily introduced into the bladder. In mares, there is no difficulty in drawing off the urine, either by passing a catheter, or by introducing the finger into the bladder, the urethra or passage being sufficiently large and short to admit of it, and the orifice or opening may be readily found between the passage which leads to the uterus, and the nymphæ, or those bulbous parts which are forced out immediately after staling. The bladder may be safely punctured through the rectum or straight gut; but these operations are rarely necessary in horses.

CAUKER. See *Calkin*.

CAUSTICS. Preparations that destroy the part to which they are applied. The principal caustics are, sulphuric acid (oil of vitriol); nitrous acid (strong spirit of nitre, or aqua fortis); muriatic acid (spirit of salt); nitrate of silver (lunar caustic); muriate of antimony (butter of antimony); sulphate of copper (blue vitriol); red nitrate of quicksilver (red precipitate); and burnt alum. The three last are considerably milder than the former, and are commonly named *escharotics*. See *Escharotics*.

CAUTERY. Cautery is of two kinds, *actual* and *potential*. By the first is meant the red-hot iron (see *Firing*); by the second any caustic application.

CAVESON. An article used in the breaking of colts, as well as in the manège. It consists of a semicircle of iron or block tin, passing round the nose about five inches above the nostrils, having three hinges or joints, concave on the inside, and covered with leather, list, or woollen cloth. This has three several rings; one in the centre of the nose-band, and one on each side; to all or either of which the reins are affixed, in order that the colt may be accustomed in the ring to pace either to the right or left. The caveson is mounted with a head-stall, somewhat similar to the head-stall of a bridle; and to the rings on each side of the caveson are straps, long enough to be buckled to the sides of a saddle, for the purpose of keeping the head in a proper position when bearing upon the colt's-bit.

CAYENNE PEPPER. See *Capsicum*.

CELLULAR MEMBRANE. The substance by which,

CEP—CER

the various parts of the body are united to each other. In some parts, the cellular structure is large and readily seen; as between the shoulder-blade and ribs, and between the skin and the muscles or flesh: in others it is extremely minute; and in some its existence, perhaps, can only be inferred from analogy. The cells, of which this structure is composed, communicate with each other; which is proved by making a small opening in the skin of an animal, introducing a blow-pipe, or stem of a tobacco-pipe, and blowing through it, by which all the adjacent skin will be blown up; and if sufficient power were employed, the air may be thus forced all over the body. (See *Emphysema*.) The cellular structure is often the seat of inflammation and abscess. It should have been mentioned, that the common method practised by butchers, of blowing up a shoulder of veal, is sufficient to show that the cells communicate freely with each other.

CEPHALALGIA. Headache. Horses are no doubt subject to this pain, either from too much blood, or from loaded bowels. It may be presumed that a horse is affected with this pain when he is continually hanging his head, and when, at the same time, the pulse is rather quick, and the inner surface of the eyelids unusually red. The remedies are physic and an opening diet.

CEPHALICS. Medicines that cure nervous headache; a complaint to which horses, probably, are not subject.

CERATE. A sort of plaster, so named from wax (*cera*) being a principal ingredient.

CEREBELLUM. The small brain. It is situated immediately behind the cerebrum or brain, and upon the origin of the spinal marrow. It is supposed to be the organ of muscular motion; and when suffering pressure, a proportionate degree of paralysis or palsy is always present. I once examined the head of a sheep that was paralytic in the left hind quarter, and found an hydatid, or animated bladder of water, in the cerebellum. It had destroyed nearly one-half of it. See *Gid* and *Hydrocephalus*.

CEREBRUM. The brain. See *Brain*.

CERUSS. White lead. Subcarbonate of lead. This is sometimes an ingredient in drying or healing ointments.

CER—CHA

CERUSSA ACETA. Supracetate of lead. Sugar of lead.

CHAFF. Straw or hay, cut up small, is thus named. Good clover hay, or clover with rye grass, makes good chaff. Mixed with corn, chaff makes a horse masticate his oats more perfectly than he otherwise would; and it has been thought that, if the whole of a horse's hay were given in this manner, it would be the means of a considerable saving. This is called manger-feeding. I have known it practised by one coach-proprietor, and his horses were always in excellent condition; probably from this mode of feeding allowing more time for rest than a horse will take when his rack is filled with hay.

CHAFING. A horse is sometimes chafed with the girths. See *Bowel-galled*.

CHALYBEATES. Preparations of steel or iron. See *Iron*.

CHAMOMILE. The flowers of chamomile are sometimes used in fomentations, and the essential oil of chamomile may be useful as a stimulant and stomachic, joined with ginger or other spice. There is a green oil of chamomile kept in the shops, often used by farriers as an ingredient in strain oils: it appears to be nothing more than common olive oil, coloured green by boiling green leaves in it and pressing out the oil.

CHARGE. A sort of plaster, made of Burgundy pitch, &c., for applying to the legs, loins, and other parts. The following is a receipt from *Gibson's Farrier's Dispensatory*. Take of mastic, dragon's blood, myrrh, gum tragacanth, of each one ounce; common pitch, six ounces; bole, litharge in powder, of each two ounces. Boil all these in a sufficient quantity of vinegar, over a slow fire until they get ropy: then take them off, and add powdered bole armeniac in sufficient quantity to make a charge. I have found a charge a useful application; and the following is, I think, as good a composition as the more expensive preparations often made use of.

Take of Burgundy pitch, or yellow rosin, four ounces.
Bees' wax, four ounces.

Common turpentine, one ounce.

Melt over a slow fire, and stir in bole armeniac, one ounce. This is to be spread, rather thick, upon the part where it is required; and as soon as it is laid on,

CHE—CHI

some tow cut in small pieces, or hurds, are to be put on it. There are other charges, made of white of egg, flour, and vinegar. These are distinguished by the name of cold charges, and were formerly considered more binding than the warm charges.

CHEST. See *Thorax*.

CHEST-FOUNDER. Gibson describes this disease as a kind of pleurisy, affecting chiefly the muscles of the ribs, caused by exposing a horse to cold air, or plunging him into a river after he has been ridden hard or otherwise heated. He says it is known "by a rough staring coat, and heaving of the flanks more than common." He directs bleeding in the flank veins, or those on the inside of the thighs; with a diet of boiled barley and oats roughly ground. Many other directions also are given, and some curious farragoes termed receipts are recommended, which may be seen in his *New Farrier's Guide*. It seems that the chest-founder of Gibson is a rheumatic affection of the muscles, by which the fore limbs are moved, as well as those, or some of them, which are necessary to respiration or breathing (see *Lungs*), and, in fact, is the same disease as that which is vulgarly, but very expressively, termed a *Chill*. To this article, therefore, we refer the reader for the practical observations we have to offer on the subject.

CHEWING BALLS. Various compositions of this kind were employed by ancient farriers for improving appetite. At present we seldom hear of them. A late author has prescribed for the epidemic catarrh, when attended with difficulty in swallowing, a chewing ball, composed of mucilage, antimonial powder, and some other powder, so as to form a hard tough mass, which is placed between the grinders. Solleysell and Gibson recommend certain nauseous compositions, of which assafoetida is an ingredient, to be placed about the bit of the horse's bridle, and so confined with cloth, that, by chewing, their efficacy may be gradually extracted and swallowed. This was intended to promote appetite. Were it designed for a contrary purpose, we should think it likely to succeed.

CHILL. This is a term not to be found, I believe, in any book of veterinary medicine or farriery, though often used by grooms and farriers. It is a disease of

CHILL.

importance ; and has been often injudiciously treated, from a mistaken notion, that if a horse has been *chilled*, he must of course require medicines of a stimulating or heating nature. This disease appears to resemble the acute rheumatism of the human body, and is perhaps precisely of the same nature. It is either general or local, and always accompanied with more or less of fever. When a horse has been heated by violent exercise, or fatigued by a long journey, and in this state plunged into a river (a very common practice among post-boys), or tied up in a current of air and washed with cold water, or suffered to stand in cold wind or rain, he will be found, after being in a stable a few hours, almost incapable of moving, and sometimes it is with great difficulty that he is led out for examination. The breathing is generally quickened, which may be seen by the flanks and nostrils ; the pulse also is often very quick, and the membranes of the eye unusually red. Sometimes the fore parts only are affected ; at others the muscles of the loins and hind legs, and sometimes it appears to be confined to the fore feet : this last is generally produced by very severe and cruelly unfair travelling or hunting, and cooling the feet suddenly. And in some instances the inflammation has been so violent, that suppuration has followed, and the hoof has separated from the *sensible* foot. (See *Foot*.) In that severe kind of chill first described, bleed to the extent of five or six quarts, and, unless the bowels are open or loose, give a mild dose of physic. The blood which has been drawn, when coagulated, will be found to have a thick coat of buff or size on it : from this appearance we may be assured, that if the pulse does not become slower, the breathing more easy, and the eye less red in a few hours, the bleeding ought to be repeated. When the muscles of the loins are affected, a fresh sheep's or lamb's skin should be placed on them, the flesh side under. In the partial chill the same treatment is proper, though it may not be found necessary to carry the bleeding so far as in the former case. When the foot alone is affected, bleeding and purging are proper ; and in every degree of chill it is advisable to take off the fore shoes, pare the soles, and wrap up

CHILL.

the feet in large bran poultices for the purpose of keeping them moist. The last case of general chill that came under my care was of a very severe kind, and considered highly dangerous: one gallon of blood had been taken off two hours before I saw the horse; five quarts more were then taken. As the symptoms had not abated about four or five hours afterward, two quarts more were drawn, which caused faintness. No physic was given, as the bowels were open, but a ball composed of one ounce of nitre, and one dram and a half of camphor. A lamb's skin was thrown over the loins. The next morning the horse was considerably better, and recovered, contrary to the expectation of the proprietor. I forgot to notice, that the fore shoes were taken off, and the feet poulticed; the soles, however, were not pared, because they were already too thin.

Since the first edition of this Dictionary was published, I have met with several very severe cases of this disease. In one of them the heart was evidently inflamed, and the horse suffering the most violent pain. (See *Heart, Inflammation of*.) Five quarts of blood had been taken from him just before I was called in. I immediately directed that he should be again bled. Accordingly two gallons more were taken, and when I called about half an hour after to see him again, I found it necessary to take another gallon. The horse recovered, and, about a month after, was turned into a comfortable straw-yard, where he appeared for some time to be doing well; but, in about three months, he became very ill, and soon died. On opening him, it was found that a large abscess (psoas abscess) had burst within the body. In another case, inflammation of the heart appeared to be coming on; the loins were much affected, and the urine was very high-coloured, voided in small quantity and with difficulty. The horse had been bled freely from the neck; clystered; had taken opening medicine, and had a sheep's skin placed on his loins. Finding that symptoms of inflammation of the heart were coming on, I directed that he should be let blood again, but, though the vein was sufficiently opened, very little blood could be obtained; I therefore opened the temporal artery and took off two gallons. The

CHI

next morning it appeared necessary to take another gallon of blood, from the other temporal artery. From this time the horse gradually recovered ; but as the internal disorder went off, and the appetite returned, the fore feet became inflamed, and so tender that the horse could scarcely stand: however, the kidneys and loins were completely relieved. When sufficiently recovered, he was turned to grass. I inquired for him about four months after, and was informed that he was as lame as when first turned out, and quite useless. See art. *Lameness*, vol. iii. of *White's Farriery*.

CHINE FELON. A term used by old farriers to express a disease in cows, occasioned by exposure to cold and wet weather, especially after having been heated. It appears to be a chill or rheumatic complaint. Sometimes the joints are particularly affected, which happens most frequently to old cows ; the disease is then named, with the same sagacity as the former, **JOINT FELON**. For these, as for all other complaints, stimulating or heating medicines are recommended. Bleeding and purging, however, are the best remedies, if we may be at all guided by analogy ; and placing the cow in some sheltered situation. The swollen joints should be well rubbed with the *embrocation for strains*. See *Strains*.

CHINKED BACK. This is an injury either of the lumbar or psoæ muscles, of the ligaments of the spine, or of the spinal marrow and certain nerves which proceed from it. It occurs in various degrees: in some cases a slight difference only is observable in the action of the hind parts as the horse is going, especially in trotting ; or a hitch, as in string-halt, of one or both hind legs. Sometimes it is more severe, and the horse appears to move in trotting as if there were a looseness in the joints of the loins. I have seen the injury so considerable that the horse in walking has dropped suddenly down, apparently from some sudden and very acute pain. He felt great dread of staling, or putting out his hind legs for the purpose. After some time, a sudden gush of urine came from him, apparently evacuated by a great effort of the abdominal muscles. The disorder soon increased, so that the horse was incapable of standing, and appeared to suffer very acute pain. I advised the

CHOKING.

proprietor to destroy him ; and on examining the body, I found the bladder completely paralysed. The sheath of the spinal marrow, and the marrow itself, were inflamed, as were the kidneys. I have met with cases of a still more severe kind than this, in which it was found, after death, that the spine of the back was fractured. See vol. i. of *White's Farriery*, art. *Strain*, or *Injury of the Loins*, page 223.

CHOKING. An accident that sometimes happens, particularly to cattle, in feeding greedily upon potatoes or turnips that have not been previously cut up. The best method of removing the obstruction is to introduce an instrument termed a Probang. (See *Probang*.) When this instrument cannot be immediately procured, a piece of whalebone or cane with a knob at one end may be substituted for it. The cane should be strong but flexible, as some force is often required ; and if it were to bend too much, the desired effect could not be produced. The knob may be made by means of tow or sponge covered with soft leather, and carefully secured to the cane: this is particularly necessary when there is occasion to pass the probang some way down the œsophagus or gullet. The knob should be about the size of a pigeon's egg, and smeared with oil or hog's lard. When balls of too large a size are given to horses, they sometimes remain in the pharynx or some part of the œsophagus: the only effectual method of getting them into the stomach is to force them down with the probang. When a horse coughs while in the act of swallowing, there is danger of some part of the food getting into the larynx ; and if it be not expelled by coughing, or otherwise got rid of, suffocation will be the consequence: the smallest quantity of food, even a single grain of oats, in this part, will produce the most distressing symptoms, and if not soon removed, will occasion death. I was applied to in a case of this kind, and having passed the probang without affording relief, and being satisfied from the animal's breathing, which could be heard at some distance, that there was some of the horse's food irritating the larynx, I proposed the operation of bronchotomy as the only probable means of removing it. This was not permitted until the horse was

CHO—CLI

nearly suffocated. An incision was then made in the front part of the neck, so as to expose the windpipe about four inches from the larynx. An opening was then made in the windpipe, and a small piece of the cartilage cut out; a small probang, such as surgeons use, was passed up through the larynx, and immediately withdrawn. The horse appeared to be much relieved immediately, and gradually recovered. A tube was at first placed in the opening that had been made in the windpipe, but this was soon removed, as it did not appear to be necessary. It was three weeks, I believe, before the opening in the windpipe was completely closed.

CHOLIC. See *Colic*.

CHRONIC. A term used to denote a disease of long continuance, unaccompanied by fever or inflammation. It is employed in contradistinction to the term *acute*, which implies a sharp inflammatory disease of rapid progress, which, if improperly managed, either terminates in death or some chronic distemper, but when judiciously treated ends in a perfect recovery. Thus inflammation of the lungs and fever are acute diseases; broken wind is a chronic complaint.

CHYLE. A milky fluid, formed by the action of the gastric juice of the stomach upon the food taken into that viscus. Chyle is absorbed in the bowels, and conveyed by vessels named lacteals to the thoracic duct; but, previous to its arrival there, it passes through the mesenteric glands, where probably it undergoes some change. The thoracic duct conveys it to a great vein near the heart. See *Nutrition*.

CICATRIX. The mark that remains after a sore, wound, or ulcer has been healed.

CICUTA. See *Hemlock*.

CINCHONA. See *Bark*.

CIRCULATION OF THE BLOOD. See *Heart*.

CLIPPING. The practice of clipping horses (that is, cutting off the long, rough coat which is caused by keeping a horse too long at grass, or otherwise improperly exposing him to cold during the moulting season) has lately been much extolled. Its chief advantages are, that it greatly improves the appearance of a horse; renders him less liable to sweat; more easily groomed;

CLO—CLY

and, when heated, more easily and speedily dried. When a horse is clipped his clothing should be warmer than before, nor should he, on any account, be exposed to cold or wet for some time after. All horses that work hard, and whose coats are *set* in the winter, should be clipped; as a long thick coat will take several hours to dry, whereas a clipped horse may be rubbed perfectly dry with very little trouble.

CLOTHING. A pernicious custom generally obtains among grooms of keeping horses constantly clothed in a stable; making no difference in the warmth of the clothes, whatever the season of the year or state of the weather may be. In a good stable, it is probable that, even in winter, it may be advantageously dispensed with; and a horse will then be much less liable to catch cold when he happens to stand still in a cold wind and rain, which must often be the case with hunters. If he has been long accustomed to such clothing, it should be changed gradually. When a horse is moulting, or shedding his coat, clothing is certainly useful; and, at such periods, standing still in cold or rain would be very injurious. In summer the only use of clothing is to protect the horse from flies and dust, and for this purpose a thin sheet of calico is quite sufficient.

CLOVES. This spice is a powerful cordial and carminative. A few drops of the essential oil of cloves has been considered a useful addition to a dose of physic, probably with a view to prevent griping; but as it does not appear to have this effect, it may perhaps be safely omitted.

CLYSTERS, or. GLYSTERS. A liquid preparation forced into the horse's bowels by means of a pewter tube, with a bladder tied at one of its ends. Large syringes are sometimes used for this purpose, but a bladder and pipe are by far the best contrivance. The tube should not be less than a foot in length, and perfectly smooth. The bladder should be large enough to contain five or six quarts.

Clysters are of three kinds, opening, anodyne, and nourishing. For the first purpose, take a gallon of warm water, with from half a pound to a pound of common salt dissolved in it, to which add four or five ounces of

COA—COL

olive or linseed oil. For the second, take two drams of solid opium; dissolve them, or rather mix them well with about half a pint of warm water, and add from a quart to three pints of fine oatmeal or wheat-flour gruel. For the third purpose, rich broths, wheat-flour gruel, and other nourishing fluids are recommended. With respect to the first kind of clyster, it may be observed, that gruel is commonly preferred to warm water; but, according to my experience, the latter does just as well as the former. As to the second, tincture of opium may be substituted for solid opium, and is by some preferred to it; but the quantity should not exceed two ounces, on account of the spirit in which the opium is dissolved. The third kind of clyster is required only in locked jaw, or in diseases of the throat which prevent swallowing; and in these its utility seems to be very questionable. As soon as the clyster has been injected, the tail should be kept close to the fundament for a few minutes, to prevent its being too hastily returned. This is particularly necessary when the anodyne clyster is employed. The pipe must be oiled or greased before it is introduced; and if its passage be obstructed by hard dung lodged in the gut, the hand should be gradually introduced in order to remove it. Convenient clyster-pipes may be purchased at Long's, veterinary instrument maker, Holborn, London.

COAGULABLE LYMPH. See *Blood*.

COCCULUS INDICUS. A decoction of these berries is sometimes used to destroy lice. See *Calkins*.

COFFIN BONE. The foot bone which is enclosed by the hoof. The latter is sometimes named the Coffin. See *Foot*, and the *Frontispiece*.

COFFIN JOINT. See *Foot*.

COFFIN JOINT, Strain of. See *Strains*.

COLD. See *Catarrh*.

COLIC, FLATULENT or SPASMODIC; commonly named gripes, fret, botts, or gullion. This is a very common disease in horses, and though often cured by cordial or carminative medicine, sometimes causes inflammation of the bowels, which is generally followed by mortification and death. It begins with an appearance of uneasiness in the horse: he paws his litter; sometimes makes in-

COLIC.

effectual efforts to stale; stamps with his hind feet; endeavours to strike his belly; gathers up his legs, and lies down heavily; groans, and looks round to his flank; rolls upon his back; then rises up suddenly; looks round to his flank; lies down heavily again, as before, and rolls upon his back. The pulse is seldom quickened, or the breathing disturbed, but the body sometimes swells. If relief be not promptly afforded, all the above symptoms gradually increase, sometimes slowly, at others rapidly, till inflammation takes place: the pulse then becomes quick, the breathing disturbed, and the pain is often so great that a violent perspiration breaks out, and the horse becomes almost delirious, throwing himself about the stall, so that it is dangerous to come near him. The disease sometimes attacks with great violence, and causes inflammation of the bowels in a few hours: in such cases we generally find the stomach filled with food that is difficult of digestion, such as unchewed oats or barley. Wheat will almost infallibly bring on a fatal attack of colic, and so will an immoderate feed of oats, especially if the horse be allowed to drink or made to work immediately after. In short, the colic is generally brought on by eating or drinking what disagrees with the stomach, either in regard to quantity or quality, and is the more likely to take place under such circumstances when the stomach and bowels have been enlarged and weakened by habitual indulgence in feeding and drinking. Greedy horses are therefore the most subject to it, and crib-biters, on account of the stomach and bowels being weakened by that pernicious habit. (See *Crib-biting*.) There is some ground for believing that the disease is sometimes brought on by drinking hard water; for, when the Royal Dragoons were quartered at Croydon, scarcely a day passed without one or more horses being attacked with flatulent colic, and, on examining the water made use of in the barracks, it was found remarkably hard. I think it probable that the spasmodic affection on which colic depends either originates in, or is often aggravated by, a strong acid which is formed in the stomach when the digestive process is interrupted. I would therefore advise that a little carbonate of soda be added to the reme-

COLIC.

dies commonly employed, as it may greatly assist, and cannot interfere with, the operation of the usual remedies. Though the colic takes place much more readily in horses whose stomach and bowels have been previously weakened by improper feeding, yet it seems probable, from some experiments that have been made, and some circumstances which have been observed, that, even in the most healthy animal, the disease may be produced by improper feeding. (See *Blasting* and *Appetite*.) When it is suspected that the hard water the horse drinks is the cause of the disorder, a little clay or chalk will ameliorate it in a considerable degree; but it must be obvious, that nothing short of an improved method of feeding can be a complete preventive. The remedies employed for the colic are numerous, and probably all of them have, at times, proved effectual; but that all of them often fail is certain. The general cause of this failure (supposing the drench to have been found effectual in other cases) is, the omission of bleeding and giving opening clysters, and if there be a strong acid irritating the stomach and small intestines, the want of an alkali in the drench may be another cause. Some cases have come under my observation, in which it was evident, from an inspection of the body after death, that the disease was incurable. I have seen a portion of the small bowels in a state of mortification, from having burst through the mesentery, and become strangled by it. I have also seen the stomach and bowels so loaded, that no medicine could have relieved them, and other cases where the stomach had burst. The first circumstances to be inquired into, when called to see a horse labouring under this disorder, are the age and constitutional strength of the animal, the manner in which he has been fed, the state of his bowels and pulse, and whether the under surface of the eyelids is unusually red. By this inquiry we may learn if it be necessary to bleed, and what quantity of blood it is proper to take, and are enabled to form an opinion respecting the species of remedy, and the strength of the dose required; for if the horse has been accustomed to cordials and strong drenches, he will require a more powerful cordial or carminative than one of different habits. Clysters should

COLIC.

always be administered ; they cannot do harm, and may be necessary—even essentially so. It is true, that horses often get over the disorder without them ; but it is also true, I believe, that many die for want of them. If the horse be a greedy feeder, and has been eating a great deal previous to the attack, we may conclude that the stomach and bowels are loaded ; and if he is strong and in good condition, and especially if the membranes of the eye appear red, we may be sure that the blood-vessels also are too full, and that, in addition to the carminative or cordial medicines, it is necessary to bleed, throw up clysters, and give some opening medicine. In severe attacks, where inflammation is likely to take place, or where there is reason to apprehend that it has already come on, it is advisable also to blister the belly, or rub it well with mustard made into a liniment with water. This liniment may be made stronger, should it be thought necessary, by the addition of a little liquid ammonia and oil of turpentine. The legs should be kept as warm as possible by means of woollen bandages, and the horse should be put into a large stall or box well strewn with litter. I believe Mr. Coleman considers oil of turpentine, in a dose of four ounces, the most effectual remedy for flatulent colic ; but I am inclined to think, that, although it cures the disease, it may increase the tendency to it, by weakening the nervous structure of the stomach. Weaker medicines may be found equally effectual, and certainly more innocent ; but in some horses a powerful stimulant may be absolutely necessary. Warm brandy and water will generally be found sufficiently strong, in the proportion of one part of brandy to two of water ; but the preparation which I have named the Anodyne Carminative Tincture is a more certain remedy ; the dose from two to four ounces, in water. The receipt for this tincture is as follows :

Turkey opium, one ounce.
Cloves, bruised, two ounces.
Ginger, bruised, three ounces.
Best brandy, one quart.

Digest for three or four weeks, and then strain through

COLIC.

blotting-paper. I have before observed, that carbonate of soda, or some other alkali, may be safely, and probably advantageously, added to these, as well as to every other drench which may be given in this disorder. When there is reason to think that the stomach and bowels are loaded, some laxative medicine should be given, either with the anodyne carminative, or after it ; such as, eight ounces of Epsom or Glauber's salt, and half a pint of castor oil, and, if these are not at hand, give about three or four ounces of common salt, and eight ounces of common oil, with a quart of warm water and a little ginger or mustard. When the anodyne carminative tincture cannot be procured, from half an ounce to an ounce of tincture of opium may be given, mixed with brandy and water and a little ginger. If the horse be not relieved soon after taking the drench, another dose of the anodyne carminative tincture, or tincture of opium, and brandy and water, may be administered. Mr. Teall, in his *Observations on the Diseases of the Horse*, directs the following drench :

Camphor, two drams.

Tincture of opium, one ounce.

Essential oil of peppermint, thirty drops.

Warm water, one pint.

And, in violent attacks, the following :

Tincture of opium, one ounce and a half.

Oil of turpentine, one ounce.

Essential oil of peppermint, forty drops.

Warm gruel, one pint.

Taplin has very injudiciously prescribed some carminative medicines in the form of a ball, which of course would require some time to be dissolved in the stomach. Whatever medicine is given should be in a liquid form ; and if a ball be taken on a journey for the sake of convenience, it should be mixed with warm beer or peppermint-water before it is given, or even with warm water. Mr. Peck, in his *Veterinary Medicine*, prescribes one ounce and a half of tincture of opium, and two ounces of spirit of nitrous æther. Mr. Feron recommends four ounces of oil of turpentine to be given with gruel ; and when the symptoms are abated, a cordial composed of

COLIC.

one ounce of common turpentine, one scruple of opium, half an ounce of ginger, and half a dram of oil of aniseeds, to be repeated four hours after if necessary. The following is Mr. Blaine's recipe :

Spirit of nitrous æther, half an ounce.

Tincture of opium, half an ounce.

Oil of turpentine, three ounces.

Mild ale, or gruel, one pint.

When costiveness is the principal cause, he advises half an ounce of calomel to be given, made into a ball with honey, and, immediately after, the following drench :

Castor oil, one pint.

Oil of peppermint, one dram.

Oil of juniper, one dram.

Water, four ounces.

To be mixed together with the yolks of two eggs. Mr. Bracey Clark strongly recommends a tincture of allspice, made by steeping bruised allspice in proof spirit. Various other remedies have been employed with success, such as sweet spirit of nitre, with peppermint-water or beer; warm beer and grated ginger; mustard; oil of juniper in peppermint-water or spirit and water; and I have heard of one case that was cured by warm water only. Horses that are subject to flatulent colic generally die of it sooner or later. I have lately opened a horse that had been subject to it many months, and had generally an attack twice or three times a week. I found a considerable number of long white worms in his stomach. I saw this horse at one time when labouring under the disorder, and finding that the drench they had given proved ineffectual, I directed four ounces of oil of turpentine to be given, which soon relieved him. The horse seldom failed of having an attack if put out to grass. I examined another horse belonging to the same establishment, that was carried off by a violent attack of colic in a few hours: the stomach was loaded with food imperfectly masticated. I am inclined to believe that the more acute or violent attacks of colic arise from a loaded stomach. In less severe cases, I think it probable that the large bowels are loaded, for when there has been a large quantity of excrement in

COL—CON

the large bowels a considerable time, the injurious effect is felt by the stomach, its digestive power is impaired, and a fit of colic is likely to take place from slight causes, such as drinking hard water, or eating any thing that is difficult of digestion. In this case clysters are essentially useful, and some opening medicine should be given with the anodyne drench ; such as,

Barbadoes aloës, powdered, three drams.

Castile soap, half an ounce.

Oil of peppermint, one dram.

Water, five or six ounces.

Mix the soap gradually with part of the water and the oil of peppermint, then mix with it the powdered aloës and the rest of the water ; add to this one pint of castor oil or sweet oil, and six drams of tincture of opium for one dose. This drench will generally give relief, and, by clearing the bowels, remove the cause of the disorder. The opening clyster should be repeated if the pain does not abate. The horse's belly should be well wiped ; or, if the pain is violent, it may be well rubbed with some stimulating embrocation. Post and coach horses are liable to a very dangerous colic by being driven off at a quick rate when the stomach is full of food : on such occasions the horse should be immediately taken out, and suffered to be at rest until the food is digested. To assist nature in this office, it will be necessary to give something strongly stimulating, such as brandy, rum, or gin, diluted with warm water ; or, if these cannot be procured, warm beer, with a large dose of ginger or pepper. See *Bowels, Inflamed*, and vol. i. of *Farriery*, p. 70 : also vol. iii. of *White's Farriery*, article *Digestion*.

COLLYRIUM. Any liquid preparation used for diseases of the eyes.

COLUMBO-ROOT. This is much used in diseases of the human body, particularly in cases of indigestion and loss of appetite, but has not been employed, I believe, in veterinary practice.

CONDITION. This term is used to imply a horse being in perfect health, or, as Mr. Taplin says, " fine in coat, firm in flesh, high in spirits, and fresh upon his legs." For a detailed account of the means to be

CON

adopted for promoting condition, the first volume of the author's *Treatise on Veterinary Medicine* may be consulted, p. 227. See also *Training*.

CONJUNCTIVA TUNICA. The external coat or membrane of the eye. The conjunctiva covers also the internal surface of the eyelids, and, when the eye is inflamed, appears full of small blood-vessels. It is this membrane which generally becomes of a blood-red colour in inflammation of the lungs, and some other inflammatory diseases.

CONSTIPATION. See *Costiveness*.

CONSUMPTION. In consumption there is a gradual loss of flesh and strength, while the appetite generally continues. Sometimes it is accompanied by a discharge from one or both nostrils, and a swelling of the glands under the jaw: such cases are generally mistaken for glanders. Consumption often attacks colts that are kept in poor marshy land, and exposed to rain and cold easterly winds: horses of all ages are liable to it, and I believe the most common cause is that which produces catarrh or cold; that is, exposure to cold when heated by exercise. Gibson has truly observed, that "hot fiery horses are the most subject to consumption, being for the most part naturally weak and washy, and of a hectic disposition." Consumption does not take place suddenly, but is very insidious in its attack; and it often happens, that the complaint is not much noticed till tubercles are formed in the lungs, and the mesenteric glands are diseased. When a colt is observed to become thin, his coat staring, and his skin feeling as if glued to his ribs, he should be immediately taken up; especially if it be in the winter season, or very early in the spring, and the place where he is kept be cold and much exposed. When put into the stable, he should be fed with mashes of bran and oats: he should not be tied up, but suffered to run loose in a box or open stable, and by no means kept very warm, as in that case the change would be too sudden, and likely to do much harm. After a short time, when he appears to have gained a little strength, a very mild dose of physic may be given, and, after an interval of ten or twelve days, repeated. By

CONTAGION.

this kind of management, if the disease has been taken in time, the colt will gradually gain flesh and strength, his coat will become smoother, and his skin looser. Should it now be the season of the year when good grass can be procured, this will soon perfect his recovery : but if it be too early to get grass, he may be gradually turned out in some sheltered situation, and be allowed a moderate quantity of oats. In the more advanced stages of consumption, where there is a frequent cough, a discharge from the nostrils, and glandular swellings under the jaw, there is no great chance of a cure. In this case moderate bleeding may be necessary, particularly if the pulse is quicker than natural, and the breathing disturbed. Small doses of nitre should be given twice or three times a day. Small doses of calomel have been recommended as an alterative, with a view to remove some obstruction supposed to exist in the mesenteric glands ; but I have never seen it do any good. Tonics also have been suggested ; but these also, according to my experience, have uniformly failed. In short, I think we may safely assert, that when tubercles of any size have formed in the lungs, and particularly if any of them should have proceeded to suppuration, the disease is incurable. I have had an opportunity of examining many horses that have died, or have been destroyed, when in this state ; and have almost uniformly found, not only an enlargement of the mesenteric glands, but a considerable disease of the great mesenteric artery also, which was generally enlarged to five or six times, and in some instances to ten times its natural size ; and on laying it open I have always found within it a considerable number of very small worms. Colts, as well as horses, sometimes become extremely thin, and apparently consumptive, merely through bad keep or starvation : the remedy in this case is sufficiently obvious.

CONTAGION. The mode in which a disease is communicated from one animal to another. It is derived from the word contact, or touch, and is used in contradistinction to *infection*, which implies the communication of disease by unwholesome miasmata, proceeding

CONTRACTION OF THE HOOF.

from the disordered animal, and sometimes spreading to a very considerable distance.

CONTRACTION OF THE HOOF. A very common disease in horses, arising from a morbid or feverish heat in the foot. It has been a prevailing opinion, that contraction of the hoof depends upon some error in shoeing; but it seems to me that the cause lies deeper, and can only be found in a morbid state of the nerves of the foot, brought on by immoderate work, or standing idle in the stable; and sometimes depending, also, on constitutional or hereditary weakness of the nervous structure of the foot. When the nervous structure of any part of the body is impaired, that part becomes weaker than before, more irritable, and more susceptible of inflammation, as well as of that peculiar condition which is called rheumatic. Hence it is that some horses may be exposed to those causes by which contraction of the hoof is generally produced, without suffering from them; while in others, in which this predisposition to disease exists, the contraction, under similar circumstances, will certainly take place. The only means of preventing contraction of the hoof is, to breed from stallions and mares that are free from it; to break colts, and bring them into work at a proper age; and when brought into the stable, to feed them properly, and work them fairly. If, at any time, the feet are found unusually hot, they should be stopped with cow-dung, and some wet cloth should be kept round the pastern. A cooling diet for a few days, or a mild dose of physic, may also be useful. The term contraction of the hoof, when used to designate lameness, I am inclined to think, has been too generally applied; for it is well known that many horses have their hoofs contracted, even in the greatest degree, without being lame; and nothing is more common than cases of foot-lameness, without any contraction of the hoof whatever. If a young horse be brought into work two or three years before he comes to maturity, and especially if his work consists in travelling fast upon the road, what can be expected but an undue expenditure of nervous or vital power? And if we consider, for a moment, the structure of the horse's foot, and the office it performs, we

CONTRACTION OF THE HOOF.

shall not be surprised, I think, that such an imprudent practice is so often productive of incurable lameness. Immoderate and early work is not the only cause of that state of the foot on which contraction of the hoof depends. A horse in a state of nature is almost constantly using exercise, and the friction to which the feet are exposed is sufficient to wear away the useless horn; but when he is taken into the stable, has shoes nailed to his hoofs, and is made to stand for several days together, perhaps, upon litter, without any exercise, is it strange that the feet should become hot and feverish? Sometimes, in such cases, a natural drain, or issue, is formed in one or both feet; that is, a thrush takes place, and affords considerable relief; but the thrush is an evil, though less than that it has a tendency to remove. (See *Thrush*.) The nervous structure of the feet, as well as of other parts, is gradually weakened by undue excitement; and, when impaired in a certain degree, seems to be irregular in its action. Thus it is we often find, in chronic lameness, that the lame foot is at times much colder than the sound one. In this case, it is probable that the nerves of the skin of the coronary ring, and the laminated substance, are in a torpid state, while those of the coffin joint are morbidly sensible. In this case, a blister may afford some relief, by lessening the sensibility of the coffin joint, and increasing that of the skin; but, in cases where the hoof and the skin of the coronet are morbidly hot and sensible, relief is more likely to be obtained by bleeding at the toe, and keeping the hoof constantly wet with cold water. A seton through the frog has been found a good remedy. Probably an artificial thrush might be found useful. The term contraction of the hoof appears to me to have been improperly applied; for in all those cases of chronic lameness that have been supposed to depend upon contraction of the hoof, though the contraction has been removed, the lameness has continued. The general application of the term *contraction* has been often the cause of obscuring the real nature of those lamenesses which have been so named, and have led to many contrivances, in the way of shoeing, for expanding the hoof; such as forcing them

CON

open by means of a screw, or by making the foot surface of the shoe slope outward. If we look at the real nature of those lamenesses, we shall find that they originate, generally, in an excessive use of the organ; and then we shall see, also, that the only probable means of restoration is a long run at grass. See *Lameness, Chronic*, vol. iii. of *White's Farriery*.

CONTRAYERVA ROOT. In human medicine this was formerly much used as a diaphoretic and febrifuge; but in veterinary practice I believe it has never been employed.

CONTUSIONS. See *Bruises*.

CONVALESCENCE. A state of recovery from illness, or an approach to a state of health.

CONVULSIONS. Under this name, veterinary authors, and particularly Gibson, have classed locked jaw and staggers. Modern writers on farriery, however, treat of those diseases under their respective heads. Calves are subject to convulsive disorders from indigestion, and the consequent formation of acid in the stomach. This causes, sometimes, spasmodic and inflammatory colic. Colts are sometimes, but very seldom, attacked by a disorder of this kind. In both the complaint is occasioned by some bad quality in the milk they drink; and, when they are fed by hand, by its not being sufficiently fresh. Taking too much milk may likewise oppress the stomach, and bring on the disorder. Three or four ounces of castor oil, and two or three of Epsom salts, may be given with about two drams of carbonate of soda, and a tea-spoonful of tincture of opium; or, what is better, three or four tea-spoonfuls of the anodyne carminative tincture: when neither of these tinctures can be had, a little brandy may be given. After relief has been afforded, it is necessary to be more attentive to the future mode of feeding, giving a little gruel, of fine wheat flour or arrow-root, with a little magnesia, if there be still any disposition to acidity in the stomach; but, if the calf scour, a little powdered chalk is better than magnesia. Dogs are subject to a convulsive disorder, which is generally a consequence of the distemper, but sometimes of worms. Opening medicine and a spare diet are the best remedies; and, if the head is convulsed, a seton in the neck may be useful.

COP—COR

See *Dogs, Distemper of; Worms; Cords; Indigestion; and Calves, Diseases of.*

COPAIBA. See *Balsam of Capivi.*

COPPER. The preparations of this metal, used in veterinary medicine, are blue vitriol (now named sulphate of copper) and verdigris (subacetate of copper). See vol. ii. of *White's Farriery.*

COPPERAS. An old name for sulphate of iron, or green copperas, and sulphate of zinc, or white copperas. The former is used in large quantities in commerce, and is still named copperas. It is also called salt of steel. See vol. ii. of *White's Farriery.*

CORD, SPERMATIC. The part by which the testicle is suspended, and which passes from the abdomen through an aperture formed by the tendons of the abdominal muscles, named the abdominal ring.

CORDIALS. Medicines are thus termed which possess warm and stimulating qualities, and give temporary energy to the stomach, and consequently to the whole system. The indiscriminate use of cordials is certainly highly pernicious; but when a horse is exhausted by violent or long-continued exertion, they may often be given with advantage, and, on such occasions, will be found more efficacious, if mixed with a pint of ale, and given as a drench. As cordials are so generally given, on almost all occasions, by grooms and farriers, it may be asked how it is that so little apparent mischief is done by them? The reasons are, first, that the ingredients of which the greater part of them are composed are nearly inert with respect to the horse, in the quantity which generally forms a dose; and, in the second place, it should be considered that, supposing the cordial to be composed of active ingredients, it is not by one or two doses, improperly given, that the injury is done: a frequent repetition of the practice, however, will gradually weaken the stomach and other parts concerned in digestion, and thereby ultimately produce some formidable disease: from this cause, perhaps, a liability to flatulent colic and indigestion often proceeds. I believe that every good effect, that can be expected from cordials, may be obtained from ginger, caraway-seeds, and

CORDS.

anise-seeds, recently powdered ; but if the seeds cannot be procured in this state, their want of sufficient strength may be supplied by the addition of a small quantity of the essential oil, either of caraway or anise-seed, or both. Cascarella bark may, perhaps, be a useful addition, when the stomach has been much weakened, and flatulency and indigestion have already taken place ; and, on such occasions, the cordial should be exhibited in warm beer or diluted spirit : hot brandy and water is, I conceive, the best vehicle in such cases. A variety of formulæ for cordial balls may be found in the author's *Veterinary Pharmacopœia*, or 2d vol. of *Farriery*.

CORDS. A disease incident to young calves, and which often proves fatal. It is commonly observed, that calves are most liable to be affected by this disorder during the first days or weeks after they are dropped : if they outlive five or six weeks, they are seldom in any danger. Calves that suck their mothers are not so liable to the disease, as those which are reared by hand. The greatest number of calves that fall a sacrifice to this disease, if not the whole of them, are those which are closely confined to the house from their birth, without ever being exposed to the free open air. It is a well-known fact, that calves which are dropped, and remain, in the fields, are in little or no danger. *Farmer's Magazine*, vol. iv. p. 59. Mr. Lawrence, in his *Treatise on Cattle*, observes, that "a complaint called the *CORDS* has recently destroyed a number of young calves in Scotland, both such as have been calved abroad and under shelter. Those which are brought up by hand are most liable, and the most dangerous period is the first week or two. The disease is described as plethoric and inflammatory: the animals die red, with a general appearance of contraction of the sinews ; whence the name *Cords*. As a prevention in any suspected subject, the meconium, or first excrement, may be purged off with syrup of buckthorn or rhubarb in gruel. On the accession of the disease, give as much antimonial powder as will lie on a shilling, or a tea-spoonful or two of magnesia, with as much calomel as will lie on a sixpence. The patient being in danger, tie his legs, and immerse him, except the head, in a tub of warm water,

COR

and keep him there as long as a comfortable warmth remains in the bath; then rub him completely dry in every part, and put him in a deep bed of straw: repeat, if needful. After all, perhaps this disease is the result of obstructed intestines, from over-feeding or want of exercise, and might be obviated by a timely dose or two of rhubarb and magnesia."

CORIANDER-SEEDS. A weak but pleasant cordial.

CORNEA. The outer transparent part or glass of the eye. This part is sometimes injured by blows, bites, or by something falling into the eye, which causes it to water a great deal: frequently the horse is unable to open it; and, if he does so, the surface of the eye appears of a bluish or smoke colour, and sometimes swollen. Bleed freely, and bathe the eye frequently with tepid water, by means of a clean piece of fine rag or sponge. When the inflammation has perfectly subsided, which may be known by the horse being able to keep his eye open without winking, if there be opacity or film remaining, put a pinch of common salt, finely powdered, into the eye once or twice a day, for two or three days.

CORNER TEETH. The outermost of the front teeth are thus named. From the marks in these teeth the horse's age is known for some years. See *Age*.

CORNET. An instrument formerly employed by farriers for separating the skin from the flesh, to put in a rowel.

CORNS. A disease of the horse's foot, often causing lameness. Corns generally happen in the inner heel, or in that part of the sole which lies within the angle formed by the inflection of the crust or wall of the hoof, or, in other words, between the bar and the crust. In their recent state they generally cause some degree of tenderness, though not amounting to actual lameness. If not attended to at this period, the horse soon becomes lame, and when the shoe is removed for examination, the horny matter in the part described will be found, upon scraping off the exterior surface, of a dark-red colour, to a greater or less extent, according to the length of time it has existed, or rather to the degree of injury the sensible parts have sustained. If the shoe be not re-

CORNS.

moved at this stage of the disease, which sometimes happens from a supposition that the lameness arises from some other cause, its continued pressure on the tender part or corn will at length cause matter to form, which, finding no vent beneath, ascends to the coronet, where it breaks out: even this is sometimes mistaken for a tread, or blow from the other foot, while the real cause is lost sight of. In the treatment of corns in their recent state, or before suppuration has taken place, the method generally adopted is to pare out the red part, or what is termed the *corn*, and so contrive the shoe, that, when applied to the foot, it may have no bearing on the tender part. This, in slight cases, generally affords temporary relief, and enables the horse to go to work again: in a short time, however, the horse's weight causes the shoe again to rest upon the heel, and the inflammation and lameness of course return. The only effectual mode of taking off pressure from the heel is by means of the bar-shoe; and this can only be applied where the frog is sufficiently prominent and firm to receive its pressure. For should the frog be considerably lower than the heels (that is, supposing the foot to be taken up, and its bottom part held upward), it must be obvious that the bar-shoe cannot bear upon it, and will therefore be useless. The only thing to be done in this case is to pare away the crust of the tender heel, so that the heel of a common shoe may not rest upon it. I am aware that the original cause of corns is often a natural weakness of the inner heel, or a want of sufficient strength in the horn to protect the sensible parts from the pressure of the shoe: it is from this consideration, perhaps, that Mr. Budd observes, "We have frequently seen the plan of cutting away the horn (in corns) followed with avidity, on account of the temporary relief it affords: such a plan, however, is deceitful, and dictated by too shallow an idea of the complaint; for though it gives time for the removal of it when existing, still it leaves what may be termed an increased disposition to it, because it deprives the sensitive parts of the protection of which they already stood too much in need; and we have no hesitation in saying, that it is

CORNS.

from this mode of treatment solely that some horses are so frequently and indeed almost constantly affected. The best plan, therefore, which can be followed, is to apply a bar-shoe, as this affords more ample means of throwing the pressure off the affected parts: no excision of the horn, we repeat, ought to be resorted to, unless there is reason to believe that suppuration has taken place." If no horn is to be pared away in corns, what, I would ask, is to be done in circumstances where the bar-shoe cannot be employed; that is, where the frog is much lower than the heels, or too rotten and tender to bear pressure? Mr. Budd tells us that the shoe is to be "laid off the part;" that is, the shoe is to be so formed, that, when applied to the foot, it may not be in contact with the tender heel: this may afford temporary relief, but by one day's work the shoe will be brought to its original form. I am inclined to believe, that corns are often rendered inveterate by trusting to such ineffectual means; for the proprietor, finding his horse relieved, sets off perhaps on a journey, the shoe soon bears down upon the heel again, and the bruise or corn is much aggravated: by dint of spur and whip, however, the horse is compelled to go on; and when he arrives at the end of the stage, so high a degree of inflammation will perhaps have taken place, that suppuration cannot be prevented. The only mode, I conceive, by which a corn can be either cured or palliated, is to take off all pressure from the diseased parts; and this not only for a short time, but till the injured sensible part has lost its tenderness, and formed horn of sufficient strength to enable it to bear pressure. While a horse is worked, the shoe should be frequently examined; and whenever the heel appears to be so near the diseased part as to be in danger of bearing upon it, it should be immediately removed, and some more horn pared away, so as to leave a considerable vacancy between the heel of the hoof and the heel of the shoe; for even if a bar-shoe is applied, the horn will in time grow down, so as to be in contact with the heel of the shoe. When a horse becomes very lame from a corn, it will be advisable to leave off the shoe for a short time, and apply a large bran poultice. When tenderness is perceived

COR

about the coronet, and a little matter is seen oozing out, the horn at the heel should be pared away, that the matter may escape freely. The exposed part may be dressed at first with a solution of blue or white vitriol; afterwards with tincture of myrrh or friar's balsam. For a more detailed account of this subject, the author's third volume of Farriery may be consulted.

CORONARY BONE. A name applied, by some writers on farriery, to the small pastern bone.

CORONARY LIGAMENT. When the hoof has been separated from the sensible foot, as represented in the frontispiece to vol. i. of the *Veterinary Medicine*, a protuberance will be observed immediately above the elastic laminae or membranes: this, Mr. Coleman has named the coronary ligament. Mr. Bracey Clarke, however, does not consider it as a ligament, but the skin in a thickened and condensed state.

CORONET. The upper part of the hoof, where the horn terminates in skin.

CORRECTORS, or CORRIGENTS. Medicines which are mixed with purgatives to prevent griping. Such are ginger, oil of cloves, oil of caraways, &c. Formerly, cream of tartar was employed for the purpose, and, perhaps, had some effect of the kind. It appears to me, however, that some essential oil, such as that of cloves or caraway-seeds, and ginger, are the best correctors. On some occasions opium is preferable.

CORROBORANTS. Tonics, stomachics, or medicines which strengthen the body. See *Tonics* and *Stomachics*.

CORROSIVE SUBLIMATE. Oxymuriate of mercury. Bichloride of mercury. This is the strongest of the mercurial preparations, and is sometimes given internally in very small doses. It is necessary to observe carefully its effects; for whenever it takes off the appetite, or causes uneasiness of the stomach or bowels, it should be immediately discontinued. The diseases in which it is employed are farcy, and obstinate cutaneous complaints, such as inveterate mange. A solution of corrosive sublimate in water has been employed as a lotion in mange, but is generally considered dangerous; a fatal disorder of the bowels having, in several instances, followed its

COSTIVENESS.

use. The following paragraph is copied from a newspaper of last July. "Five cows, belonging to Mr. Hatchet, that had the mange, were bathed with a solution of corrosive sublimate in tobacco-water, and died soon after. The farrier or cow-leech had to pay the damage." Large doses of corrosive sublimate have sometimes been given to glandered horses, by way of experiment, without producing any remarkable effect; but, in other trials, comparatively small doses have produced a fatal inflammation of the stomach and bowels: I therefore advise only small doses, such as three or four grains, or even less, to be given. When sublimate is employed externally, as it may be with safety when the disorder of the skin, for which it is used, has not spread far, its solution in water will be more easy if a few drops of spirits of salt, or muriatic acid, be added to it. Muriate of ammonia, commonly called crude sal ammoniac, also has this property. See *Mercury*, and vol.ii. of the author's *Farriery*, or *Veterinary Materia Medica*.

COSTIVENESS, OR BINDING OF THE BELLY. By this term is implied a preternatural or morbid detention and hardening of the excrement; a disease to which every animal is subject, but the horse, perhaps, more than any other. It arises, for the most part, from want of exercise, when a horse is kept upon hard dry food, as oats or beans; but in some horses it appears to be habitual. Costiveness is often the cause of colic, and sometimes of inflammation of the bowels; therefore, whenever it is observed, a dose of laxative medicine should be given, and opening clysters thrown up to remove any hard excrement that may be lodged in the rectum or last gut. (See *Clysters*.) To prevent a return of the complaint, regular exercise and a change of diet are necessary: green food is the best for the purpose; but if this cannot be procured, bran mashes should be substituted. When a horse is naturally disposed to costiveness, a bran mash should be given twice or three times a week instead of oats, and now and then a little green food. Cattle also are liable to a dangerous kind of costiveness, termed *fardel-bound*; and in this case there is sometimes an appearance of slight purging, probably from the liquid parts passing between

COUGH.

the indurated excrement and the gut, by which the practitioner may be deceived. A laxative or purgiving drench should be given in this disease without loss of time. (See *Laxatives* and *Purgatives*.) Calves also are subject to costiveness, particularly when first put to dry meat: it is highly necessary in this case to give immediately some laxative medicine. The following formula will be found to answer the purpose. Epsom or Glauber's salt, from three to six ounces, according to the age and strength of the patient: castor oil, from two to four ounces. When costiveness appears to have brought on any degree of fever, which is indicated by quick pulse and redness of the membrane under the eyelids—and this is often the case in horses—or if it be accompanied with uneasiness or pain in the bowels, it will be proper to bleed the animal. Dogs are very subject to costiveness, especially such as are fed chiefly on bones. A little oil, or flowers of sulphur, should be given; and the animal be kept to a diet of oatmeal and broth, or boiled vegetables. When the countenance looks dull and the eyes red, bleeding is necessary.

COUGH. A cough is generally the first symptom of a catarrh or cold (which see); but there is another kind, called chronic cough, which appears to be sometimes caused by allowing a horse that has an inordinate appetite to eat too much hay and drink too much water: it may also be produced by what is termed foul feeding; that is, when a horse is disposed to eat his litter in preference to hay. Indeed, we often find that horses with voracious appetites, when stinted in hay, will soon eat their litter, however filthy it may be. For the first kind of cough, bleeding, mashes, and a dose of the following powder, twice a day, are perhaps the best remedies; taking care that the horse be not exposed to wet or cold, until the disease be perfectly removed. Should this fail, let some pectoral balls be given; for which a variety of receipts may be found in the author's *Veterinary Pharmacopœia*. The powder is to consist of one ounce of nitre and two drams of emetic tartar; and this should be continued until the horse stales considerably more than usual. With respect to the second kind of cough, or that which

COWS.

is caused by voracious or foul feeding, no good can be expected from medicine, unless the horse's diet be properly regulated: he should be allowed only a moderate quantity of hay and water; taking care that the former is of the best quality, not mow-burnt, and free from dust. To prevent him from eating his litter, he should constantly wear a muzzle, except at the time he is eating his allowance of food. The medicines employed for the cure of chronic cough are very numerous. In the formulæ, recommended by writers on farriery, we generally find galbanum, asafoetida, ammoniacum, Barbadoes tar, balsam of sulphur, balsam of Peru, garlic, Castile soap, cinnabar, &c.; in short, almost every article in the *Materia Medica* has been occasionally put in requisition to subdue this formidable disorder; and, after all, I believe it will be acknowledged by those who have given every plan a fair trial, that much more may be done by proper attention to the horse's diet and exercise, than by any of them, or all of them put together. However, the following powder, if given twice a day in a mash or a feed of bran and oats, is frequently beneficial:—Take of powdered nitre, levigated antimony, and yellow rosin, of each two or three drams. Mix. This may be continued for five or six days. A little green food is likewise useful. It should have been observed before, that horses with chronic cough should have their bowels kept rather open than otherwise, by giving occasionally bran mashes, and, if necessary, a small dose of laxative medicine.

COWS, DISEASES OF. The disorders of cows are not so numerous as those of the horse: they are often brought on by feeding on bad hay during the winter, or by being kept in low, wet, and exposed situations. Cattle that are brought from a warm to a colder climate, and such as are naturally of weak constitutions, are most liable to disease. Working cattle are often hurt by drinking cold water at a time when they are heated. The principal disorders of cattle are scouring, red water, yellows, acute indigestion, commonly named blasting, hoven, or blown, chronic indigestion, loss of the cud, and inflammatory disorders. Breeding from cows too early is a bad practice, and tends to weaken the constitution. Stagnant

CRA

pond-water often becomes foul and unwholesome (see *Abortion*), especially in continued dry weather, as cattle almost always dung, either in the water or close to it, immediately after drinking. Such water has been the means of making cows slip calf, and has brought on also red water and other diseases. See vol. iv. of *Farriery* or *Cattle Medicine*; also *Red water*, *Blasting*, and *Yellows*.

CRACKS IN THE HEELS. These are generally a consequence of negligence or want of cleanliness: sometimes they occur, particularly in winter, without any fault of the groom. After washing the cracks with soap and water, and afterwards with warm water alone, that no soap may remain on the sores, take of finely powdered alum, one ounce; pipe-clay, powdered, two ounces; water, enough to form them into a thin paste about the consistence of cream. This paste is to be spread over the heel with a soft painting brush, and repeated for three or four days, by which time the cracks will be found nearly healed. It will then be necessary, in order to soften the parts, to apply the following ointment:—bees' wax, two ounces; best olive oil, six ounces; melt them over a very slow fire, and then add of white lead, finely powdered, two ounces: let the whole be thoroughly mixed. These cracks are merely local, though by their irritation they sometimes cause swelling of the leg. The horse should be turned loose into a box, and be fed with bran mashes. Exercise will rather tend to retard the healing of the cracks, particularly if it exceed walking, or if the horse be taken upon wet or dirty roads. When cracks are much inflamed and very sore, it will be proper to apply a poultice for two or three days before the astringent paste is used. If any medicine is given, perhaps the diuretic alterative is most useful; and, as the horse is not to be exercised, it may prevent any ill consequence which might otherwise ensue. Cracks are frequently caused by allowing a horse's heels to remain wet in frosty weather.

CRACKS, SAND. See *Sandcracks*.

CRADLE. A sort of wooden necklace, made to hinder horses from biting.

CRAMP. A spasmodic affection of the muscles, either of a particular part, or of the whole body. In locked jaw,

CRA—CRE

for example, the muscles of the jaw are at first chiefly affected; but, unless relief is afforded, the spasm or cramp gradually extends to the neck, limbs, and at length to all parts of the body. Cramp of the stifle, or rather of the muscles attached to it, is not a very unfrequent occurrence. The horse, upon being turned round in the stall, or moved a few steps, is observed to be suddenly cramped in the stifle joint. The hind leg is stretched out and appears stiffened; but, after a short time, it is suddenly drawn up, and the stifle bone (*patella*) is observed to return suddenly to its situation. It may depend upon an irregular or unequal action of the muscles named *vasti*. Rub the part well with a mixture of sweet oil, camphor, and liquid ammonia; and, if that be not sufficient, turn the horse to grass without hind shoes. An inequality in the heels of the hind shoe may tend to produce this disorder; that is, turning up the outside heel, and leaving the other plain.

CRANIUM: See *Skull*.

CRAPAUD. The French name for canker.

CRAPAUDINE. See *Tread*.

CRAPULA. A disease described by Topham in his book on cattle medicine, for which he particularly recommends bleeding. It appears to be precisely the same complaint we have treated of under the head *Blasting; Blown or Hoven; and Cud, Loss of*.

CRISIS. A term applied to the blood, when there is such a mixture of its principles as to constitute a healthy state: hence, in dropsy and scurvy, the crisis of the blood is destroyed.

CRASSAMENTUM. The red globules or colouring matter of the blood, mixed with coagulable lymph; or rather the red coagulum or jelly-like substance into which blood is formed soon after it is drawn from an animal. See *Blood*.

CREAM OF TARTAR. A well-known acid substance, of little or no use in farriery. Gibson, however, recommends it as "a gentle purge," but "brisk in its operation, and passing off readily by urine." He says it may be dissolved in warm ale, and mixed with syrup of buckthorn: this mixture he advises to be given occasionally to horses and cattle, as an alterative, or in the jaundice.

CRE—CRI

It is sometimes mixed with purgatives, from a mistaken notion that it prevents griping.

CREMASTER. A muscle which surrounds the spermatic cord as it passes out of the belly, and then goes to the cellular membrane of the scrotum, where it is lost. Its use is to suspend and draw up the testicle.

CREPANCE. See *Cracks*.

CRESCENT. See *Pumice Foot*.

CRIB-BITING. A disagreeable and injurious habit which young horses sometimes acquire: it consists in their laying hold of the manger with their teeth, and apparently sucking in air; making, at the same time, a peculiar noise. Some writers have imagined that crib-biting depends upon flatulency or some irritation in the stomach, and that there is more probably an expulsion than a swallowing of air. I have seen the belly swell considerably after crib-biting; and, in some instances, horses will contrive to suck the air, as it is termed, without laying hold of any thing. It is well known, that by placing a healthy young horse near a crib-biter, he will generally, in a short time, acquire the same habit. The usual mode of preventing it is to put a leather round the neck, as tight as can be, without impeding swallowing or breathing. Another plan is to cover the edge of the manger with a sheep's skin, the wool side outward. Others have recommended keeping straw in the manger, and abridging the allowance of hay; or taking away the rack and manger, making the horse eat his hay from the ground, and his oats from a nose-bag. It is a vice which certainly lessens the value of a horse considerably, as it tends to induce weakness of stomach, and, consequently, indigestion and flatulent colic.

CRICK IN THE BACK. An injury of the muscles of the back, causing a difficulty and stiffness in motion. It is sometimes slight, and soon removed by rubbing the back with stimulating liquids, or by covering it with a fresh sheep's skin; at others it is of a more serious nature, and not unfrequently incurable: in this case, a horse is technically said to be chinked in the back, or broken-backed. It is probable that the injury is not confined to the muscles of the back in such cases, but

CRO—CRU

that the vertebræ or back bones, or the ligaments uniting them, are also affected. The best thing to be done in this complaint, is to cover the horse's back with an adhesive plaster or charge, and to turn him to grass. See *Charge*.

CROCUS. Saffron. The most useful qualities of saffron are its agreeable flavour and beautiful yellow colour. If it possess any cordial property, it is in too low a degree to render it useful. Those who have occasion to purchase saffron should buy none but *hay* saffron: cake saffron is very inferior.

CROCUS MARTIS. An oxide of iron, not used in medicine.

CROCUS METALLORUM. An oxide or subsulphate of antimony. See *Antimony*, vol. ii. of *White's Farriery*.

CROPPING. Cutting off part of a horse's ears. The ear is enclosed between the branches of a pair of clams, which are so adjusted as to give the ear any shape that may be required. All that part that is outside the clams is then cut off with one stroke of a keen knife. Neither dressing nor stitching of the skin is necessary after the operation.

CROSS-TREES. See *Dumb Jockey*.

CROWN-SCAB. A scurfy eruption round the coronet. In the first place let it be well washed with soap and water; then apply the yellow ointment, or ointment of nitrated quicksilver, for a few days, by which it will be soon cured.

CRUPPER. A strap affixed to the back of the saddle, with a loop at the end for the purpose of admitting the horse's tail. Its use is to prevent the saddle from slipping forwards; by doing which, it impedes the motion of the shoulders, causes the horse to slip, and not unfrequently throws him down. A crupper is now considered a very unfashionable appendage to a saddle, and has been completely exploded by the patent saddle-cloths, which merely cover the horse's withers, and buckle under the belly, thus obviating the defect of low shoulders. However, prior to their introduction, many a horse has been thrown down for want of a crupper; and the action and ease of many more destroyed by tight girthing, in order to keep the saddle in its place.

CUD—CUR

CUD. The food contained in the first stomach of a ruminating animal, which is returned to the mouth to be chewed at the animal's leisure.

CUD, or QUID, LOSS OF. The old writers on farriery seem to have had but a very imperfect knowledge of this complaint. Mr. Lawrence says that the cause is a laxity or weakness of the muscular fibres of the first stomach, and a consequent inability to expel the food for the purpose of rumination. This weakness may arise, he observes, from various causes; and the mode of cure, is to brace the fibres and strengthen the system. Warm mash of bran and ground oats are first to be given; the animal is then to take from four to six drams (according to his strength) of aloës and rhubarb, of each equal quantities; salt of tartar, half an ounce; anise-seeds powdered, one ounce—in gruel or beer: he is to have good sweet hay, in small quantities at a time; and, after two or three days, should take the following drench:

Bark,
Gentian, } of each half an ounce.

Ground ginger, a tea-spoonful.

Warm ale, a pint.—Moderately sweetened.

To be given twice a day, and continued a while; or, occasionally, a decoction of horehound, chamomile, and carduus, sweetened. The rough astringents, such as alum, verjuice, &c. used by cow-leeches in this disease, observes the same author, are highly improper, and sometimes produce fatal effects.

CUMMIN-SEEDS. A weak carminative and cordial.

CURB. A swelling on the back part of the hind leg, a few inches below the point of the hock, generally causing lameness. Blistering is the remedy commonly recommended; and, if properly managed, it generally removes the lameness, but not always permanently. I have, in several instances, known the lameness to return when blistering alone has been trusted to; and have found it necessary to resort to the actual cautery or firing. I am inclined to think that it is the best plan to depend on firing only, and to perform the operation as soon as the disease is observed. I am aware that, in

CUT

this opinion, I differ from many practitioners of the present day, many of whom have their favourite specifics for curb; all of them consisting of some blistering ingredients, the basis of which is Spanish flies, but rendered more active by euphorbium, sublimate, &c. When the blistering process is preferred to firing, it will be proper to repeat the application after the effect of the first has ceased. For a more particular account of this subject, the author's third volume of *Farriery* may be consulted.

CUTANEOUS DISEASES. Diseases whose seat is in the skin; as the mange, for example. They are generally dependent on a vitiated state of the blood, induced by unwholesome food, over-eating, or a disordered state of the stomach and bowels; but may also arise from contagion or suddenly-checked perspiration.

CUTICLE, or SCARF-SKIN. A thin insensible membrane, which covers and defends the true skin. It is this which forms the bladder raised by blistering. The cuticle becomes thicker by pressure, as may be observed on those parts of our feet which principally bear upon the ground.

CUTIS. The skin or hide which lies under the cuticle. Besides the cuticle and skin, horses and other large animals have a muscular expansion which lies immediately under the latter, called the *Fleshy Panicle*, by which the skin is moved, so as to shake off dust or flies, or any thing that hangs loose upon the hair.

CUTTING. A horse is said to cut, when he strikes the inner and lower part of the fetlock joint, in travelling, with his hoof; and not with the edge of the shoe, as smiths generally suppose. Cutting often depends on a faulty position of the feet, the toes inclining too much outwards: the usual mode of correcting this is to make the inner heel of the shoe higher than the other; not by turning it up, but by a gradual swell from the quarter to the heel. Young horses sometimes cut, merely through fatigue and weakness; and in some horses this failing depends upon an awkwardness in going, which neither shoeing nor any thing else can correct. When a high-trotting horse inclines his toes inward in going, he is apt to strike himself on the inside of the fore leg

CUT—DAF

immediately below the knee: this is termed the Speedy Cut, and is considered dangerous, as the pain which the blow occasions often causes him to fall suddenly: this failing can seldom be prevented effectually; the only thing to be done is to take care that there be no superfluous horn in the striking part, to raise the inner quarter and heel of the shoes, and not to suffer them to project beyond the hoof. The clenches of the nails should be examined and beaten down whenever they appear to rise in the slightest degree above the horn. Mr. Morecroft has suggested a plan for the prevention of cutting, which is the opposite to that I have described. He observes that, when a horse is at rest, he supports his weight equally on both feet; but having the inner quarter much raised, when one foot is elevated he must be supported obliquely upon the other, and hence have a tendency to fall outwards; to prevent which he brings the moving foot nearer the supporting one, by which he strikes it; but by elevating the outer instead of the inner side of the supporting foot, it gives it a disposition to lean inward, and fall to the inside, which will throw the moving farther from the supporting foot. Mr. Morecroft's reasoning is certainly very ingenious, and in a few instances I have found his plan succeed, but by no means generally. I am of opinion, that the shoe commonly employed for the prevention of cutting is apt to produce corns, by making the horse bear more on the outer heel. It is usual to defend that part that is cut when in action by a leather boot, of which two sorts are made, one for the knee and the other for the fetlock joint. Dr. Bracken is, perhaps, not far from the truth when he observes, that "as a goose will always go like a goose, so a horse that cuts so as to break the skin will hardly ever leave off such ill faculty." Bracken's *Art of Farriery*.

CUTTING. See *Castration*.

D.

DAFFY'S ELIXIR. A favourite medicine among grooms and horse-keepers, and generally given in colic or gripes.

DAU—DEG

It appears to be nothing more than a compound tincture of senna.

DAUCUS. The carrot.—This root is extremely nourishing, and is very commonly given to horses; colts particularly. It gives a gloss to the coat, but is not capable of supporting a horse that is hard worked. It is frequently prescribed in coughs and other pulmonary affections, and is sometimes used to form a poultice.

DEADLY NIGHTSHADE. See *Belladonna*.

DEBILITY. Debility may be permanent or temporary. In the first, the constitution is either naturally weak, or has been rendered so by improper treatment or sickness; the second generally arises from over-exertion, and, if the exciting cause be frequently repeated, terminates very commonly in a total decay of the constitution, in spite of the stimulus afforded by cordials and tonics. Rest is the only cure for weakness induced by fatigue. The greatest attention should be paid to the degree of work that a horse is capable of enduring, as what may be salutary for him at one period may greatly exceed his strength at another; and this generally depends upon the state of the weather, the season of the year, the process of molting, or shedding the coat, &c. However, the most prevalent cause of debility is the too common practice of working colts at two or three years old, by which an innumerable train of diseases is engendered and fostered, and the services of the animal very considerably abridged.

DECOCTION. The process of extracting the virtues of a substance by boiling it in water. The liquid so prepared is also termed a decoction.

DEFLUXION. A falling-down of humours from a higher to a lower part. Most writers mean nothing more by it than an increased secretion and discharge of mucus from the nostrils, or tears from the eyes, in consequence of inflammation.

DEGLUTITION. The act of swallowing. The power of swallowing is often impeded in the horse by inflammation taking place in the throat, as in quinsy or sore throat, violent colds, distemper, &c. This impediment is only of a temporary nature; but there is another,

DEM—DEN

which is of a more serious kind, and is often neglected until it is incurable. The grinding teeth of horses often wear down in such a manner that the outside edge of the upper grinders irritates or wounds the cheek, and the inside of the lower grinders acts similarly upon the tongue, or the skin connected with it. This state of the grinding teeth may be brought on in different ways. I am inclined to think that feeding on unbroken beans is one cause, not only from their hardness, but from the small stones which are sometimes mixed with them, especially with the small tick-beans. Coarse, woody hay, that contains the stalks of docks, thistles, fern, or brambles is apt to injure the gums, or cause rotteness in the sockets and roots of the teeth. The pain they feel in chewing their food makes them swallow it before it is properly masticated, in which state it is difficult of digestion, and injures the stomach. A continuance of this state of the grinding teeth gradually weakens the muscles concerned in swallowing. A short time since, I examined a horse that was literally starved to death from this cause. Whenever a horse is observed to void unbroken oats or beans with his dung, his teeth and cheeks should be examined; and it will then generally be found necessary to rasp the outside edges of the upper grinders, and sometimes, but not so often, the inside edges of the lower grinders. There is an instrument sold for this purpose by Mr. Long, Veterinary Instrument Maker, High Holborn, London.

DEMULCENTS. Medicines of a mucilaginous and oily kind, which cover the mucous membranes when they are tender and irritable, and defend them from the action of what would otherwise injure them. Of this kind are linseed tea, decoction of marsh-mallows, solution of gum arabic, &c.

DENTITION. The act of changing the teeth, which is going on from the third to the fifth year. During this period the horse's mouth is apt to become tender and inflamed at times, which renders it necessary to keep him for a short time on bran mashes; and give a little nitre, opening medicine, or clysters, as may appear necessary. See *Lampas*, and *Mouth, Diseases of*.

DEO—DIA

DEOBSTRUENTS. Medicines which remove obstructions.

DETERGENTS. Medicines which cleanse ulcers and dispose them to heal.

DIABETES. An excessive discharge of urine, accompanied with almost constant thirst and considerable weakness. This disorder sometimes takes place from feeding horses upon new hay or other unwholesome food, while at the same time they are working as much as if their food were of a good quality. The disorder is sometimes of a more serious kind, and though palliated for a time, proves in the end incurable. A change of diet is the first thing to be attended to, and giving such medicines as will restore the energy of the stomach is the next object to be accomplished. I have found opium and bark with cordials beneficial, and capable of removing the disease permanently. Other practitioners have given sulphate of copper (blue vitriol) with a similar effect. Sulphate of iron, lime-water, animal food, or broth made from it, have been likewise recommended. If animal food is again tried, I think it should be given as it is in India; that is, in the form of rich broth made with sheeps' hanges and seasoned with spices. If bark is thought too expensive, catechu may be tried, as in the following recipes:

BALL FOR DIABETES.

No. 1.—Take, of powdered catechu, from two to four drams.

Ginger, one to two drams.

Powdered caraway-seeds, half an ounce to an ounce.

Opium, half a dram to a dram.

Treacle, enough to form the ball.

To be given morning and evening.

No. 2.—Powdered catechu, from two to four drams.

Powdered allspice, two drams.

Opium, half a dram to a dram.

Treacle, enough to form the ball.

To be given morning and evening.

Mr. Denny, of the 10th Dragoons, says he has seen more than a hundred horses labouring under the disease at the same time. When the 1st or Royal Dragoons

DIABETES.

were in Ireland, many horses were affected with diabetes. It does not appear to have been ascertained how far this disease corresponds with the diabetes of the human body, particularly in one essential point, that is, the sweetness of the urine. Though it is not positively stated, yet we may infer that all Mr. Denny's patients recovered; therefore it is probably a different disease from that which affects the human body, which, I believe, very rarely admits of a perfect cure. Gibson describes a kind of diabetes, which, he says, is the result of long-continued sickness, old surfeits, or the effect of hard riding, hard labour with low feeding, and in horses of a weak constitution is very difficult to cure. He says, "The horse soon loses his flesh and appetite, grows feeble, his hair stares and his bones stick out, his eyes look weak and watery; and when it is of long standing, he grows unfit for all kinds of business. I have seen several horses with this malady, but they are often incurable, unless in the beginning; for the staling in a true diabetes is not soon conquered; it usually ends in rottenness." Mr. Blaine, in describing this disease, observes, that the urine is milky or watery: in all the cases I have seen or read of, except Mr. Blaine's, the urine has been transparent, nearly resembling water. According to Mr. Denny, the following plan will be sufficient to effect a cure. On the first discovery of the disease, give the following ball morning and night:

Alum, two drams.

Bole,

Peruvian bark, } of each half an ounce.

Ginger, two drams.

Treacle, enough to make a ball.

Mashes are to be given two or three times a day, and a moderate quantity of lime-water should be administered for drink: walking exercise and warm clothing are necessary; and the horse should be well rubbed, particularly his legs. Mr. Ryding gives the following formula:

Take, of Peruvian bark, twelve ounces.

Grains of paradise, two ounces.

Gentian, three ounces.

Honey, sufficient to form sixteen balls.

DIA

One to be given every morning. In four cases that came under my care many years since, bark, opium, and ginger perfectly succeeded ; but they were all recent cases. I have been informed by a correspondent, that he found Mr. Watts's plan of copious bleeding, joined with Dr. Rollo's of giving animal food, even in a putrid state, successful in one case ; and I have been informed that Mr. Coleman has recommended and adopted Dr. Rollo's method of cure, but I do not know with what success. This method consists in making the animal abstain, as much as possible, from vegetable food ; and giving him broth, and balls made of flesh, mixed up with wheat flour ; giving as little drink as possible. Beside the remedies above mentioned, other tonics and astringents are occasionally employed ; as oak-bark, catechu or japan earth, muriate of iron, white vitriol, &c. Other recipes may be found in the author's *Farriery*.

DIACHYLON. A plaster made by boiling litharge and oil together.

DIACODION. A syrup made from a decoction of the heads of white poppies. It possesses an anodyne and narcotic quality, similar to opium.

DIALTHÆA. See *Althæa*.

DIAPENTE. A bitter powder much used by farriers in strengthening drenches. It is composed of gentian, birthwort, bay-berries, and myrrh, in equal proportions.

DIAPHORETICS. Medicines which promote insensible perspiration, or excite moderate sweating. See *Sudorifics*.

DIAPHRAGM, MIDRIFF, or SKIRT. A muscular and tendinous substance, which divides the cavity of the chest from the abdomen or belly. The diaphragm is essentially necessary to respiration or breathing. See *Respiration*.

DIARRHŒA, or SCOURING. This disease often happens to horses from eating new oats or hay, and is then of little importance, as it soon ceases when the diet is changed, or when the stomach has become accustomed to such new food : but should it continue, let them drink freely of gruel made of wheat-flour ; and if this fail, give an astringent ball. When there is reason to suspect that the diarrhœa depends upon worms in the bowels, or

DIA—DIE

other hurtful matter lodged in them, give, in the first place, a ball composed of two drams of aloës, three drams of rhubarb, and three drams of soap. If it appears to arise from exposure to cold, or from drinking freely of cold water when heated by exercise, sound wisping and warm clothing are proper; gruel also will be found useful. In obstinate diarrhœas, accompanied by loss of flesh and appetite, and considerable debility, there is generally some disease either of the liver or other internal part, which generally proves fatal.

ASTRINGENT BALL.

Take, of caraway-seeds, recently powdered, six drams.

Catechu, two drams.

Ginger, one dram.

Opium, half a dram.

Treacle, enough to form a ball.

This may be repeated the following day, if necessary; the horse continuing to drink the gruel of wheat flour or arrow-root. Some horses of delicate constitutions are attacked with diarrhœa whenever they are put to any considerable work: such horses should take a cordial ball, with the addition of two or three drams of catechu, before they go out, and as soon as they return from hunting or other exercise, which usually brings on the complaint.

DIASCORDIUM, or ELECTUARY OF SCORDIUM. An elaborate or rather a hotch-potch kind of preparation, now seldom used. The principal and efficient ingredients are opium, cassia, bark, cinnamon, long pepper, and ginger. It contains also many useless articles, among which is scordium, or water germander, from which it takes its name.

DIATESSERON. An electuary of very great antiquity: it takes its name from being composed of four ingredients, viz. bay-berries, gentian, round birthwort, and myrrh, of each equal parts. These are to be formed into an electuary with honey.

DIET. The best food for horses is hay and oats, provided they are good; and the quantity most fit for a saddle-horse is from eight to twelve pounds of hay, and from three to six quarters (quarter of a peck) of oats,

DIGESTION.

per diem. When good hay cannot be had, a moderate quantity of oat or wheat straw may be given. When horses do but little work, their allowance of oats should be diminished, and a bran mash substituted for the feed of oats that is omitted. When horses are kept in a stable without work or exercise, they should have no oats, but two bran mashes daily. If they are inclined to eat their litter, they should be muzzled. During the summer, if they cannot be turned to grass, they should be allowed green food in the stable. Beans are a useful article of diet for post and stage-coach horses; also for waggon-horses that work hard. They should always be broken or bruised. Small tick-beans are more apt to be swallowed unchewed than the large beans, and they generally are mixed with small stones which injure the teeth. (See *Mastication*.) Horses that are fed on grains and malt dust are seldom free from mangy complaints: they become very fond of grains after being used to them, and will eat an enormous quantity if not restrained. Grains, and perhaps hay when eaten immoderately, frequently produce an itching of the hind legs, which makes a horse stamp and scratch himself, and in doing this he often inflicts serious wounds or bruises upon the coronet. (See *Mange* and *Calkin*.) Immoderate feeding stretches the stomach and bowels; and in proportion as they are stretched, so are they weakened, and rendered liable to diseases, such as flatulent colic or gripes. As the stomach enlarges, the appetite generally increases, and becomes less and less delicate, till, at length, the horse will eat even foul litter. In this state of the stomach the energy of the muscular and nervous system is depressed, which leads to various diseases. Horses that feed voraciously, and have a craving appetite for water, should be allowed only a moderate quantity of either; and if they eat their litter, they should constantly wear a muzzle, except at the time of feeding. For more particular instructions on this subject, the reader may consult the first volume of the *Veterinary Medicine* or *Farriery*. See also *Feeding*.

DIGESTION. The change which food undergoes in the stomach, so as to become fit for the nourishment of the

DIG

body. Healthy or good digestion depends chiefly upon the following circumstances: a perfect mastication or chewing of the food; a proper supply of saliva, and of that peculiar fluid formed in the stomach, termed *gastric juice*; and a due degree of strength in the stomach and other subordinate parts concerned in digestion, as the liver, pancreas, and intestines. (See *Indigestion*.) For an account of the various causes which prevent horses from getting into condition, as it is termed, see the 1st and 3rd vol. of the author's *Veterinary Medicine*.

DIGESTIVES. A term applied to such ointments or other preparations as tend to excite a healthy discharge from ulcers or wounds, and thereby promote their healing. The following ointment will be found to answer this purpose:

Digestive Ointment. Take, of yellow basilicon, or ointment of yellow rosin, eight ounces; common turpentine, strained, four ounces. Melt over a slow fire, and when fluid, stir in, of powdered verdigris, two ounces. Continue to stir the mixture until it is cold.

DIGITALIS. Foxglove. This has been much employed in human medicine, but it does not appear to have been ascertained how far it may be used with advantage in the diseases of horses and cattle. I have been informed that it has been given with success as a palliative in broken wind. In the experiments I have made with it, the most remarkable effect was that of diminishing or entirely taking off the appetite, which did not speedily return. The dose was from half a dram to a dram of the dried leaves powdered. I believe, but am not certain, that in some experiments made with it at the Veterinary College upon a glandered horse it proved fatal; and Mr. Bracey Clark killed an ass by giving him half an ounce of powdered digitalis. One pound of the fresh leaves of this plant, beat into nine balls and given to a horse, brought on, in the space of a few hours, a surprising coldness of the ears and legs: the eyes were nearly closed, and the pulse quick and small: at length, cold clammy sweats supervened, and shortly terminated in death, the lower lip hanging down and the legs trembling. The animal died in convulsions, and no appearances of inflammation

DIL—DIS

of the stomach or intestines could be discovered on dissection. Any further experiments, therefore, which may be made to ascertain the effects of digitalis, should be conducted with the greatest caution.

DILUENTS. Those substances which increase the proportion of fluid in the blood. Water, perhaps, may be justly considered as the only diluent.

DIRECTOR. A grooved instrument made for the purpose of conducting the knife in opening sinuses, and in several other operations of surgery.

DISCUTIENTS. A term applied to those substances which have a power of repelling or dispersing tumours.

DISLOCATION. The displacement of a bone from its socket. A dislocation of the fetlock joint may be replaced, and kept in its natural situation by bandages: the horse must not be allowed to take any exercise until all inflammation be completely subdued. A dislocation of the stifle or patella must be reduced by bringing the horse's leg forwards under the belly, and then depressing the outer angle of the patella or stifle bone with the palm of the hand, which gives the extensor muscles a power of drawing the bone into its place. I have met with several cases of temporary dislocation of the patella, which appeared to be occasioned by a want of harmony between the *vasti* muscles, or by a temporary cramp of the *vasti externi* muscles. In every instance the bone soon returned to its natural situation. Should the bone be easily displaced, as is sometimes the case, bandages wet with astringent lotions, a blister, or firing, may be beneficial after the reduction of the dislocation. I have known a horse, whose stifle had been permanently dislocated outwards, go through a season as a hunter free from lameness. I never saw but one case of dislocation of the hip joint; it took place in a colt from an accident when at grass: a false joint was formed, and when I saw him, at seven years old, he was not in the least lame, and was constantly worked as a gig-horse. Dislocation of the *humerus* or shoulder bone may take place, as may also dislocation of the pelvis from the sacrum, and displacement of the dorsal or lumbar vertebrae, but, generally speaking, such accidents are rare.

In all cases of dislocation it is proper to bleed, to

DISTEMPER.

prescribe an opening diet and perfect rest, and to employ such means as may be most effectual in reducing the displaced bone, and keeping it in its natural situation. At the expiration of a few days, a strengthening charge may be put on, and the animal be turned into a loose box for two or three weeks.

DISTEMPER. This name is applied to diseases that prevail at particular periods, and spread to a considerable distance. The distemper of horses generally happens in spring or summer, and appears at first as a severe cold or catarrh, but accompanied by some degree of fever, and generally causing great debility. Sometimes there is considerable soreness of the throat and difficulty of swallowing, distressing cough, loss of appetite, and discharge of matter from the nostrils. The great remedy is bleeding freely as early as possible, and repeating it if necessary. When there is difficulty in swallowing, blister the throat, steam the head with bran mash, and let the horse suck up a little thin or liquid bran mash several times a day. Open the bowels with clysters. The best medicine is a little nitre and antimonial powder; but when the throat is sore, it is improper to give either a ball or a drench. Close filthy stables are very injurious. In summer, green food is proper; and if the weather is favourable, the horse may be turned out for a few hours daily. When the distemper happens, it generally goes through a stable; therefore, so soon as one of a team is attacked, the rest should be carefully watched, and bled freely the moment any symptom of the disease appears. It is advisable also to endeavour to prevent the spreading of the distemper, by separating the diseased horse from the rest, and keeping the others upon an opening diet, or giving them a mild dose of physic. See *Catarrh, Epidemic; Influenza*, and vol. iv. of *White's Farriery or Cattle Medicine*.

DISTEMPER in Dogs. Dogs are generally attacked by the distemper between the third and sixth month. The symptoms are not always alike in every case: the most common are, a dry husky cough, causing efforts to vomit, by which a little frothy matter is brought up;

DISTEMPER.

bad eyes; running at the nose; costiveness; heaviness and loss of appetite, accompanied very frequently by symptoms of internal inflammation, for which blood-letting may be requisite. As the disease advances, the dog appears much emaciated, and grows excessively weak, particularly in the hind legs and loins. Convulsive twitchings of different parts, especially of the head, come on, attended with dimness of sight; and as the disease proceeds, and puts on a more virulent form, these twitchings change into strong convulsive fits, which continue for a long time, and repeatedly return. In these fits, the dog runs round, foams at the mouth, and appears to be in great pain, and to have a constant desire to dung. This is sometimes attended with obstinate costiveness, at others with violent purging. The stomach is extremely irritable, every thing taken into it being immediately thrown up. When the disease has reached this state, the animal seldom recovers, and is generally carried off in one of the convulsive fits. According to Mr. Blaine, "The peculiar weakness, which attacks the loins and hind legs in this disease, sometimes appears very early and very suddenly; in other cases it does not appear at all, even though the termination should be fatal. Many cases of distemper put on a putrid appearance: this is common where the attack has been violent at first, and rather sudden; and in these instances the disease lasts, even with violence, for two, three, or four weeks, producing every appearance of putrid fever; the running from the eyes and nose being very foetid, and often bloody; the stools black, liquid, and very offensive; and the animal weak, restless, and very irritable." Mr. Blaine considers the distemper as a specific catarrhal affection; the inflammation generally extending down the windpipe to the lungs, or down the gullet to the stomach and bowels: in some cases both these passages are affected. In the beginning of the distemper it is generally advisable to give an emetic, for which purpose two or three grains of tartarized antimony, or the same quantity of turpeth mineral, may be given. A tea-spoonful of common salt dissolved in a little water will also answer the purpose very well. After the ope-

DISTEMPER.

ration of the emetic, should the dog be costive, or the bowels not already open, give a purgative of calomel and jalap, or calomel and aloës, in doses suited to the age and size of the animal: about two grains of calomel, with eight or ten of jalap, or five or six of aloës, will perhaps be found sufficient for a young pointer three or four months old. The dog should be kept in a warm situation, well bedded and clean; be liberally supplied with warm, rich broth and warm milk; and when the purgative has operated, solid animal food may be allowed, as beef, mutton, or horse-flesh, boiled. In cases where the eyes, nose, and head are much affected, a large seton in the neck will be found useful. When costiveness is attended with great weakness, castor oil is the safest purgative; and when the distemper is accompanied by vomiting and purging, the animal throwing up his food soon after it has been swallowed, from twenty to thirty drops of tincture of opium should be given, or about one grain of solid opium, according to the age and size of the dog: should the purging be excessive, he should be made to take frequently some arrow-root gruel. Mr. Blaine recommends, in this case, gum arabic and chalk; and when the purging has been effectually checked, a mixture of his distemper powder and Peruvian bark. Mr. Daniel, in his *Rural Sports*, says he has witnessed extraordinary effects, in the distemper, from James's powder given in the following manner: when the symptoms of the distemper are apparent, a third part of one of the parcels in the half-crown packet is to be given, mixed with a little butter, and the dog is to have plenty of warm broth or milk and water, and, if possible, he is to be near a fire, or at least kept very warm. Two hours afterward, another third part is to be given; and should neither of these operate by vomiting or purging at the end of four hours, give the remaining third. Should the first two portions have the desired effect, the remaining third should not be given until four or six hours (according to the evacuations) after the expiration of the four hours: in the mean time, the dog should be encouraged to lap; and if he refuse, be forced to take plentifully of warm broth or milk and water. It mostly happens, even when

DIURETICS.

the case is inveterate, that evacuations are brought on by the taking of one parcel, generally by the second dose; but should it so happen that there is no such proof of the powder's effect, the second parcel should be divided and given in a similar manner, until the stomach is emptied. I have lately been informed by a friend who was an eyewitness to the fact, that copious bleeding, with a purgative of calomel, aloës, and asafœtida, proved successful in a very bad case of distemper.

DIURETICS. Medicines that promote the secretion of urine: such are common turpentine, soap, nitre, juniper-berries, potash, and soda. The preparations of mercury and antimony, under certain circumstances, act as diuretics. Some vegetables, as garlic and leeks, have also the same properties. The following is a good diuretic formula:

Take, Common turpentine, four ounces.

Castile soap, four ounces.

Recently powdered and sifted caraway-seeds,
eight ounces.

Ginger, in powder, one ounce.

Beat the whole into a mass, and, if necessary, add a sufficient quantity of linseed powder, or flour, to make it of a proper consistence; after which, divide it into moderate-sized balls, to be given when requisite. The combination of a cordial and a diuretic is found to benefit horses that have coughs or bad wind. To young healthy horses, half an ounce of nitre, and the same quantity of rosin, may be given with corn or bran, and continued for some days. In dropsical swellings of the legs or other parts, diuretics are highly useful: they are also beneficial in chronic cough, and have in many instances proved the best palliative for broken wind. They are commonly given when a horse is observed to stale with difficulty, or when the urine is foul and of a whitish or whey colour, and often with good effect: it is necessary, however, to distinguish carefully between such cases, and inflammation of the kidneys or bladder. (See *Urine, Retention and Suppression of*.) Horses that are frequently rubbing themselves, or have pustules breaking out on different parts of the skin, or such

DOC—DRA

as are disposed to those swellings commonly termed Humours, generally derive much benefit from the use of diuretics: they should not, however, be continued too long at one time, as considerable weakness would probably be the consequence. The practice adopted by some grooms, of giving strong diuretics upon every trivial occasion, and often without any reason whatever, is highly injurious: the bladder and kidneys are often rendered so irritable by such indiscretion, that a horse will be obliged to stale several times during a short ride; and if urged to go on by an inconsiderate rider, without being allowed to stale, some serious disease of the bladder may ensue. I am inclined to believe that the kidneys are sometimes considerably enlarged by the frequent use of strong diuretics, and that I have seen them incurably diseased from the same cause. A good diuretic ball may be made with

Soap, half an ounce.

Powdered yellow rosin, half an ounce.

Common turpentine, two drams.

Anise-seed or caraway-seed powder, as much as will form a ball.

The diuretic powder may be made by mixing together

Nitre, half an ounce.

Yellow rosin, half an ounce.

Tartarized antimony, one dram.

See vol. ii. of *White's Farriery*.

DOCKING. Cutting off part of the tail. The instrument used for this purpose is represented in plate 22, fig. 2, of vol. i. of *White's Farriery*, in which the operation is also described, p. 316. I have only to observe here, that the earlier this operation is performed, the better will the horse *carry his tail*, as it is termed: it should never be delayed beyond the first year, and then very little if any searing will be required. It has been said, that by keeping up the tail in an almost perpendicular direction at the time of docking, and searing it in that position, nicking would be rendered unnecessary.

DRASTIC. A term applied to purgatives that operate powerfully.

DRE—DRO

DRENCHES, or DRINKS. When it is necessary that any medicine should operate speedily, as in cases of colic or gripes, this is the best form in which it can be given. Cattle medicine is always given as a drench, though Mr. John Lawrence seems to think that a ball would be often a more desirable form. Those who have an opportunity of making the experiment in cattle might easily ascertain whether there be any well-founded objection to the exhibition of a ball. Drenches are usually given by means of a bullock's horn, the large end cut in the form of a spout: a bottle is sometimes substituted for it, but there is danger of its being broken in the horse's mouth. In giving a drench, the tongue is to be held down with the left hand, and the head being moderately elevated, it is to be poured gradually down the throat. The head is to be kept in this position until the drench is swallowed; but if the animal happen to cough while the drench is in his throat, the head should be immediately let down. In preparing drenches, farriers generally make use of ale; but this can only be proper for cordial drenches: on other occasions, water or gruel is the best vehicle for medicine. When the throat is inflamed and sore, no attempt should be made to give drenches.

DRESSING. A term employed to designate medical applications to a wound or ulcer, and the operation of cleaning or grooming a horse.

DROPSY. This disease consists in a collection of serous or watery fluid, either in the circumscribed cavities of the body, as the abdomen or belly, the chest, and ventricles of the brain, or in the cellular membrane under the skin. (See *Cellular Membrane*.) The latter kind of dropsy is most common in animals, and often exists unaccompanied by the former; but whenever there is a collection of water in the cavities, there is generally at the same time dropsical swellings externally. External dropsy, or *Anasarca* in medical language, is often named Water-farcy by farriers, and many of them have acquired considerable reputation for their success in curing the farcy: but there is not the least analogy or affinity between the two diseases; and their boasted

DROPSY.

specifics are generally strong diuretics mixed with many useless ingredients. External dropsy sometimes affects particular parts, as the legs, belly, chest, or lips; at others, it is diffused over great part of the cellular membrane. A dropsical swelling may be distinguished by its coldness, and by its retaining the impression of the finger for some time. Those swellings which sometimes affect the legs and other parts in consequence of high feeding without sufficient exercise, arise from an inflammatory state of the system, and are soon removed by bleeding, exercise, and mild diuretics; but that kind of dropsy which arises from a weakened state of the system, and particularly when attended with an accumulation of fluid either in the chest or abdomen, is not so easily got rid of, and sometimes terminates fatally. Colts are subject to a dangerous kind of dropsy, which is accompanied with quick pulse and loss of appetite, but without any remarkable appearance of inflammatory affection. The swelling generally begins about the sheath, extending to the belly and chest, and gradually increases until it becomes of an alarming size, particularly in the belly. When the disease terminates in death, a large quantity of fluid is found either in the chest or belly, often in both: the pericardium or heart-bag also partakes of the disease. On the commencement of this disorder, bleeding is generally proper, especially if the pulse be quick, and the membrane under the eyelid unusually red; and in this case a large quantity of blood should be taken off. If, when the blood has coagulated, a coat of buff or size is found on the surface, it shows that the evacuation was necessary, and that it may be repeated with advantage if the symptoms do not abate. Mild diuretics should be given now and then, so as to keep up an increased discharge of urine: at the same time, the animal's strength should be supported by a moderate use of nourishing food. His drink should consist of oatmeal mixed with water, and he may be allowed to eat carrots, lucerne, vetches, or a small quantity of oats, now and then. When there is considerable weakness, tonic medicines are proper, as Peruvian bark, cascarilla bark, with an aromatic, as cinnamon, caraway-seeds, &c. Some practitioners give also the mi-

DROPSY.

neral tonics, such as salt of steel, white vitriol, &c. Diuretics, however, are the essential remedies in all dropsical affections. When the swellings become so large as to be troublesome on account of their weight, it will be proper to scarify them, by which, in a short time, they will be considerably reduced. The best instrument for this purpose is the common horse-lancet, which should be plunged, to the depth of nearly half an inch, into several places, choosing the most depending, or lowest parts of the swelling. Horses kept in low swampy land, or on moors, are also subject to a dangerous kind of dropsy, which in such districts is generally termed Moor-evil. I have been informed by an intelligent correspondent, a person of considerable experience in the complaint, that the following recipe has proved almost invariably an effectual remedy for this disorder, and that before this preparation was known, the disease very often ended fatally: he adds, "It comes the nearest to a specific, of any medicine I ever knew: I never bleed, rowel, or scarify in dropsy." This receipt is an improvement on old Gervase Markham's for a "Dropsie or Evil Habit of the Body;" but this improvement, or rather addition (from two to four ounces of soap), is the most efficient ingredient, if not the only one, in the formula. Take of strong ale, five quarts (Markham directs a gallon); set it on the fire, and skim off the white froth which rises; then put into it a handful of wormwood with the stalks, and let them boil together until reduced almost to a quart; then add three ounces of treacle, one ounce and a half of long pepper and grains of paradise in fine powder, and from two to four ounces of Castile soap. The whole to be given at one dose, and the horse exercised immediately after till he sweats. I should have before observed, that whenever costiveness occurs in dropsy, laxative medicines should be given.

Dropsy of the Head. See Brain.

Dropsy of the Chest. This is a consequence of inflammation of the lungs; and when it happens, that important organ has generally been so far disorganized or injured, that there is not the least chance of the animal's recovery. In some instances, it is less rapid in its

DROPSY.

progress than in others; and from an apparent abatement of the inflammatory symptoms and fever, the practitioner may be led to prognosticate a favourable termination of the disorder; but according to my experience, it almost always ends fatally. Diuretics and tonics, with a nourishing diet, are the remedies most likely to do good. Blistering the sides extensively may be worth a trial. Mr. Blaine recommends the operation of tapping; that is, making an opening between two of the ribs, in such a situation as to allow the water to run off freely. I once tried this method, and drew off more than half a pailful of water; but it did no good, nor do I expect it ever will. The horse died a short time after, and the lungs were found in a very diseased state, particularly on the surface or *pleura*, which was covered with flakes of coagulable lymph: the inner surface of the ribs and diaphragm, as well as the pericardium, were in the same state.

Dropsy of the Pericardium or Heart-Bag. Under the head Bleeding, a case of this kind is noticed: the existence of the disorder, however, was not suspected, nor had the groom who attended the horse any idea of his being unwell, but brought him to be bled, merely because he had been accustomed to that evacuation at certain periods: this time, however, it proved fatal.

Dropsy of the Belly, or Ascites. This disease is a consequence of peritoneal inflammation (see *Peritoneum*), and is either acute or chronic. In the former, the inflamed state of the bowels is the only thing which is to be attended to; and if we succeed in subduing this, any water which may have been poured out into the abdomen will probably be absorbed again: but when some degree of increased action continues in the exhalant vessels, or if the absorbents have lost their power, there will be an accumulation of water in that cavity, constituting the disease termed Ascites. This kind of dropsy is sometimes connected with, or dependent upon, a chronic disease of the liver. Mr. Blaine says "it is known by a tension of the abdomen, and the undulating feel when gently struck with one hand, the other remaining fixed. The urine is made in small quantities,

DUC—DUM

the thirst is great, and the horse is short-breathed." This description does not appear to me to be sufficiently clear. In all cases of ascites, the most prominent symptom, and that which first attracts notice, is the anasarcaous swelling of the sheath, belly, chest, or other parts; this is sometimes of a prodigious size, very hard, and if pressed with the finger, the impression will be found to remain for some time after. These external swellings, if scarified freely, will soon be lessened considerably, as I have before described; but the more important disease will remain until the proper internal medicines are given, the principal of which are diuretics, at the same time supporting the animal's strength with tonics and a nourishing diet. This kind of dropsy most commonly happens to horses that are kept in low swampy grounds, and are much exposed to cold, rain, and fogs: it can scarcely be doubted, therefore, that the cause of this disease is checked or suppressed perspiration; hence we see the propriety, or necessity indeed, of restoring this discharge, by rubbing the skin lustily and frequently, and by warm clothing, and exercise. As a diuretic, perhaps the following drench will be found effectual:—Take of Castile soap, two ounces; dissolve in about a pint of good strong beer: then add of powdered cascarilla bark, two drams; powdered ginger, three drams; genuine oil of juniper, two drams; or if this cannot be procured, balsam of capivi, one ounce.—Mix for one dose. Gibson and Bartlett recommend purging medicines when the horse has recruited his strength a little; but I am satisfied that the treatment above described will be found much more efficacious.

DUCT. A membranous tube or canal, through which certain fluids are conveyed. Thus the lachrymal duct conveys tears from the eyes to the nose; and the biliary duct, bile or gall from the liver to the bowels.

DUKE'S OINTMENT. This preparation consists of equal parts of balsam of sulphur and tallow. It has been recommended for bruises from the saddle, or to be rubbed on parts that are mangy; but it is by no means an eligible application.

DUMB JOCKEY. A machine made use of in breaking

DUN—DYS

colts. It is made of wood, is fastened across the saddle, and has iron springs, to which the reins are affixed, at about the height of a man's hand as he sits on horseback. These springs yield to the horse's head when he pulls, and in some degree answer the purpose of a rider, bearing the horse's head up, and playing with his mouth. The part which crosses the saddle, and descends some way down the side, serves to accustom the colt to the pressure of the thigh.

DUNG. By examining a horse's excrement we are enabled to judge of his state of health. When the dung is hard, in small knobs, and covered with slime, the exhibition of purgatives will be beneficial; and when it is passed in too great quantities, it commonly arises from a too liberal allowance of hay. If oats are voided whole with the dung, it will generally be found to be caused either by a defect in the grinding teeth, requiring the use of the file, or by a too voracious appetite, occasioning the food to be swallowed without mastication; in which case clover chaff cut rather long may be mixed with every feed of corn.

DUODENUM. The first intestine which comes from the stomach. It is the first of the small intestines. See *Intestines*.

DURA MATER. A strong membrane which invests the brain and divides it into two lobes or hemispheres. It likewise separates the *cerebrum* from the *cerebellum*. In the first it is called the *Falciiform Process*; in the second, the *Tentorium Cerebelli*.

DYSENTERY. I have never seen a disease which exactly corresponds with the dysentery of the human body: it is said, however, to be "not uncommon in the horse, and more frequent in cattle and sheep. It very commonly begins with some degree of fever; as a trembling, dryness of the mouth, loss of appetite, a great degree of weakness, drooping of the head and ears; sometimes a copious sweating, but more commonly dryness and heat of the skin: there is usually a heaving of the flanks, and the animal turns his head towards them as if griped; there are frequent stools, but these seldom consist of the natural excrement, but of a mucous, slimy discharge, ac-

DYSENTERY.

accompanied with a peculiar fatty substance like soft suet ; there is evidently much distress during these evacuations, and sometimes the fundament appears excoriated : it is not uncommon to see blood pass with the stools, generally in streaks, but sometimes in such quantity as to tinge the whole discharge of a red colour ; and in the latter stage of the disease there generally appear membranous, filmy substances, which have been compared to soaked leather. The pulse towards the beginning of the disease is hard and full ; but afterwards becomes quick, small, and sometimes irregular. The animal is very stiff and averse to motion ; and if the complaint continues long, a swelling of the legs usually comes on. This disease does not appear so dangerous among the inferior animals of this climate as in warmer countries ; but it sometimes proves fatal, or terminates in a weakness of the bowels and scouring that are not easily removed. It is necessary to distinguish this complaint from the common purging or scouring, with which it is very generally confounded. It must therefore be observed, that in scouring there is no fever, whereas this is common in dysentery ; that the discharge in scouring, though thin, has almost always the appearance of excrement, is not bloody, and is scarcely ever mixed with fatty matter. Dysentery is more common in hot weather and in hot seasons than at other times ; but is very commonly produced by the sudden application of cold, especially to the legs and belly, when the body is over-heated and fatigued by exercise : hence swimming in autumn, drinking largely of cold water when in a profuse sweat, or other sudden changes from heat to cold, have frequently caused it. It is said to be brought on by riding a horse very hard in hot weather. As it seems certain that dysentery is of an inflammatory nature, it is proper to begin the cure by bleeding." If the pulse is quick, and the blood when coagulated has much buff or size upon it, it may be proper to repeat the operation after a few hours. Some laxative medicine should then be given, and an opening clyster thrown up. The following laxative will be found to answer the purpose :

DYSENTERY.

Powdered aloës, from two to three drams.

Carbonate of potash, two drams.

Warm water, eight ounces.—Mix, and add of castor oil, twelve ounces, for one dose.

When purging has taken place, the horse should be well supplied with gruel made of wheat flour, and if he refuse to drink it, he should be drenched. The body should be kept warm and well rubbed, and the legs bandaged. When the disease has been subdued, the horse's strength is to be recruited by tonic medicines and a nourishing diet. Should the complaint continue after the bowels have been emptied, a ball composed of

Opium, a dram,

Ipecacuanha, half an ounce,

has been recommended; but this, I believe, will rarely be found necessary. It is said that cattle are subject to a similar disease, only that in them there is not perhaps so much mucus or slime discharged with the dung; and that it is not uncommon in sheep: in the latter animal it is generally named Brackshaw or Breakshaw, and in cattle Fardle-bound. In these animals a laxative of Epsom salts, gruel, and castor oil, should be first given, particularly to cattle; but in sheep, a practical farmer, Mr. Lock, has usually given warm milk: he proposes, however, to try, in addition to this, nitre in half-dram doses, with chalk or some other absorbent powder, and twenty or thirty drops of laudanum, twice or thrice a day, with frequent clysters of warm milk and water. We may infer, I presume, from his adopting this new plan, that the old one did not prove successful. According to Mr. Gillespie (quoted by Mr. Findlater), the disorder is often produced by over-heating, when the sheep are hunted by dogs in folding them, &c. He thinks the disease infectious, and recommends tarring as the best preventive. Mr. Blaine, as well as the author from whom great part of this article has been taken, considers dysentery and molten grease to be the same disorder; but according to my experience, molten grease is very unlike the dysentery of the human body, nor does it altogether resemble the disease above described. See *Molten Grease* and *Costiveness*.

DYS—EAR

DYSPEPSIA. Indigestion. Weakness of stomach. A mild cordial morning and evening, and a rather spare, light and nutritious diet, are the best remedies in this complaint. It is a disorder that occurs in various degrees; is generally brought on by improper feeding, over-exertion, or illness; and may sometimes be radically cured by persisting in a proper mode of feeding, exercising, and grooming. In summer, the best remedy is to turn the horse into a paddock where the pasture is rather bare. Some horses are naturally bad feeders, and require great attention in order to keep them in good condition.

DYSURIA. Difficulty in voiding urine. Horses are frequently affected with this complaint in a slight degree, and it very generally goes off spontaneously; but, where this is not the case, the bowels should be opened by laxative medicines and bran mash; the rectum cleared of its contents by clysters and back-raking; and as the disorder is generally accompanied by pain at the time of staling, infusion of linseed, containing some nitre, is generally of service. A ball composed of two drams of camphor and one ounce of nitre will seldom fail of giving relief. Pain and difficulty of staling are sometimes caused by inflammation of the kidneys, in which case the symptoms are generally very distressing, the animal constantly making efforts to stale, without being able to void more than a few drops of high-coloured or bloody urine. I have seen this disorder produced by over-riding, and by physic improperly administered. (See *Kidneys, Urine, and Bladder*.) Sometimes, however, dysury is caused by the presence of a calculus in the bladder, which will generally require an operation for its extraction.

E.

EAR. The horse's ears are of great use to him, though sometimes cut off or shortened, in order to improve his appearance. Horses that have large ears generally are unable to keep them erect, which has an

EAR—EFF

unpleasant appearance: but as this does not diminish the good qualities of the horse, it is better to put up with it, than to have recourse to the operation termed *cropping*. Another method has been proposed for altering this appearance; that is, cutting out a piece of skin on the outside of the root of the ear, and stitching up the wound. I have never seen this plan tried, nor do I ever wish to see it done, as lop-eared horses are sometimes good goers, and appear to have their hearing as perfectly as other horses. Trimming out the ears, that is, cutting off the hair from the inside, for the purpose of improving their appearance, renders them liable to colds and sore throats, and therefore should never be done.

EARTHS. The earths used in veterinary medicine are bole armeniac, magnesia, chalk, and clay. Horses have sometimes an appetite for earthy matter, and may be seen eating the mortar from an old wall, or the soil from the ground. This indicates a disordered state of the stomach, and probably a painful feeling from the irritation of an acid in the stomach. The horse should have a mild dose of physic combined with cordials, and afterwards be kept to a spare diet, chiefly of bran, with only a small quantity of the best hay or straw. A little magnesia may be mixed with the bran, to correct the acidity in the stomach. See *Appetite* and *Absorbents*.

EAU DE LUCE. See *Ammonia*.

EAU DE RABEL. A composition often prescribed by French veterinary writers as an antispasmodic, or for the same purposes as sweet spirit of nitre. It is made by mixing one part of sulphuric acid with three of rectified spirit.

ECCHYMOsis. By this term is meant an escape of blood from a vein or artery into the cellular membrane. Thus, in blows or bruises a vein is burst while the skin remains unbroken; the blood, therefore, gets into the cellular membrane under the skin, and causes a swelling of the part.

ECTROPIUM. An eversion of the eyelids.

EFFERVESCENCE. A kind of boiling or bubbling, caused by the extrication of fixed air. This may be seen when an acid is mixed with carbonate of potash.

EFF—ELE

EFFLORESCENCE. A floury or powdery appearance that takes place in some neutral salts when exposed to the air. This may be seen in Glauber's salt, now named sulphate of soda, which is therefore called an efflorescent salt.

EFFLUVIA. Invisible vapours that escape from bodies. Such are the odours of flowers, and the infectious matter of putrid fever.

EFFUSION. The oozing out of serum or coagulable lymph from the blood-vessels. When the blood-vessels of any part, or of the whole body, are overloaded with blood, the finer parts, or serum, ooze through the pores of the vessels; and sometimes the serum contains so much of the coagulating principle as causes it to become solid, constituting a hard swelling: at others, the blood is poor and watery, and the serum that oozes out is thin, in large quantity, and in a fluid or liquid state in one or more of the different cavities of the body, and in the cellular membrane under the skin, constituting dropsy. In young cattle or yearlings that are kept too well, there is sometimes such a degree of repletion of blood or plethora, that the vital principle is quickly extinguished. See *Quarter-ill* and *Fever*.

ELATERIUM. The fecula of wild cucumber: a powerful drastic purgative in the human body, but in the horse it appears, from one trial I have made, to have but little effect. I gave two drams to a horse without producing any sensible effect. Bourgelat, in his *Matière Médicale Raisonnée*, says of elaterium, "It is a violent purgative in the human body, but does not produce this effect upon animals."

ELDER. The blossom and leaves of elder are employed in making two ointments; that from the former being of a white colour, the other green. Both are supposed to possess the property of allaying or assuaging inflammation. They do not appear, however, to differ from hogs' lard or oil in their medicinal properties. A water is distilled from the flowers, which is rather fragrant, but does not differ medicinally from distilled water.

ELECAMPANE. The root of this vegetable is often

ELE—EME

used by farriers: it does not appear, however, to possess much medicinal power. Its virtues are said to be diaphoretic, diuretic, and stomachic: it is also said to promote expectoration in coughs and asthma.

ELECTUARY. A form in which medicines are kept in the shops; such are Venice treacle, lenitive electuary, &c. It is of the same consistence as conserves, confectations, &c.

ELEMI. A resinous gum, sometimes employed as an ingredient in digestive ointments.

ELIXIR. From the Arabic word signifying quintessence. It is a sort of tincture, formerly distinguished by this name for its supposed excellence. Such were the *elixir proprietatis* (compound tincture of aloës), *elixir of vitriol*, &c. This last is a good form for giving sulphuric acid. It may be made by mixing sulphuric acid with aromatic tincture. See *Eau de Rabel*.

EMBROCATION. A liquid preparation for rubbing upon the skin, and generally used for strains, bruises, or indolent swellings.

EMETICS. A class of medicines that have but little effect on the horse. Hellebore, and some few other medicines, appear to cause nausea, or a sensation of sickness, but vomiting cannot be produced.

EMETIC TARTAR. Tartarized antimony, or antimoniated tartar. This is employed in veterinary medicine as a febrifuge or fever medicine: it acts as a diaphoretic. The dose is from one to two drams, generally mixed with nitre, and sometimes with camphor. Large doses of emetic tartar have been given by way of experiment, and sometimes without producing any sensible effect. I once gave four ounces, but it made the horse sick and uneasy in his bowels for several hours, after which he appeared to recover perfectly. It must not be inferred, however, that because no immediate ill effect is produced by giving such large doses of metallic preparations, they do no harm. From examining the stomachs of horses that have been the subjects of such experiments, I am satisfied that irreparable mischief may be done by them; and certain it is that a vast deal of unnecessary pain has been thus inflicted. One dram,

EMO—EMU

or a little more, of emetic tartar may be given with safety.

EMOLLIENTS. Medicines which relax and soften the parts to which they are applied, thereby removing or diminishing inflammation and pain. When employed internally, they are supposed to dilute or sheathe any acrimonious matter that may be irritating the bowels or other sensible parts. Warm water is the most efficient medicine of this class, whether used inwardly or externally: it is usually joined, however, with mucilage and oil, and these perhaps render it more efficacious. Emollient vegetables are those which contain mucilage or oil, and sometimes both: thus marsh-mallows contain a great deal of mucilage, which may be extracted by boiling water; and both oil and mucilage abound in linseed or flax-seed. Poultices are the most effectual emollients, and, next to poultices, fomentations—which see.

EMPHYSEMA. *Pneumosis.* Swellings which contain air. Emphysematous swellings are not often met with in horses, but always take place in the quarter-ill or evil of young cattle. Such swellings are known by a kind of crackling noise or sensation when they are pressed with the fingers. The lungs of broken-winded horses are often found emphysematous after death, in consequence of some of the bronchial vessels or cells being ruptured, and the air escaping into the cellular tissue of the lungs.

EMPYEMA. A collection of purulent matter in the chest.

EMULGENT ARTERIES. The arteries which carry blood to the kidneys.

EMULSION. A milky liquid made by mixing oil and water together, by means of mucilage or an alkali; such as potash, or carbonate of potash. Blanched almonds, pounded and rubbed with a little sugar and mucilage of gum-arabic, form, with water or rose-water, an excellent emulsion. Emulsions are given in coughs, either alone, or as a vehicle for more active medicine.

EMUNCTORY. The emunctories of the body are those ducts or passages by which the useless or excrementi-

ENA—ENT

tious parts of the blood are carried off. The principal emunctories are the skin, the kidneys, the bowels, and the lungs.

ENARTHROSIS. An anatomical term applied to the ball and socket joint. Thus the shoulder bone or humerus is connected with the blade bone or scapula by enarthrosis.

ENCANTHIS. A disease of the inner corner of the eye or *caruncula lachrymalis*. It happens occasionally in glanders and farcy, and sometimes in ophthalmia, obstructing the puncta lachrymalia, or even the lachrymal duct. Apply a weak solution of white vitriol—about half a dram, or two scruples, to half a pint of water.

ENCEPHALOCLE. A hernia or rupture of the brain.

ENCEPHALON. A name sometimes given to the brain, and sometimes to all the contents of the skull.

ENCYSTED. A term applied to tumours which consist of a solid or liquid substance contained in a sac or cyst. The warts sometimes met with upon the horse's sheath or belly are of this kind, and if pinched with great force, a sort of kernel may be squeezed out of them: the best remedy, however, is to cut them off close with a knife or scissors. See *Warts* and *Angle-berries*.

ENDEMIC DISEASES are those peculiar to a certain country, or to a certain class of persons.

ENEMA. See *Clysters*.

ENTERITIS. Inflammation of the bowels. This is a serious disorder, and is brought on by different causes. Most commonly it is a consequence of flatulent colic, gripes, or fret, from loaded stomach and bowels, or obstinate spasm. Sometimes it is occasioned by plethora, or repletion of the blood-vessels, or by the sudden application of cold water to the skin or to the stomach at a time when the horse is sweating and fatigued by exercise, or by giving physic improperly. It occasionally arises from applying solution of sublimate to the skin, in cases of mange or other cutaneous diseases. See *Bowels*, *Colic*, *Molten Grease*, and *Purgatives*.

ENTEROCELE. A hernia in which the contents of the tumour are intestine.

ENT—EPI

ENTERO-EPIPLOCELE. A hernia containing both intestine and omentum. See *Rupture* and *Omentum*.

ENTROPIUM. An inversion of the eyelids.

ENURESIS. See *Urine*, *Incontinence of*.

EPIDEMIC. Disorders which spread over a whole country. In veterinary medicine such diseases are termed *Epizootic*. See *Catarrh* and *Distemper*.

EPIDERMIS. The cuticle or scarfskin ; an insensible covering to the *cutis* or true skin.

EPIDIDYMS. A hard oblong substance attached to the testicle and spermatic cord. In castration, this part, as well as the testicle, should be cut off.

EPIGLOTTIS. The cartilage which covers the larynx or top of the windpipe at the time food or water is passing into the gullet.

EPILEPSY. Falling sickness ; fits. I have never met with fits in the horse which exactly resemble the epileptic fits of the human body ; but the horse, as well as the dog and cat, is sometimes subject to fits, which appear to depend upon water in the ventricles of the brain, or upon the irritation of worms in the stomach or bowels. In the horse, there are various degrees of this affection, from vertigo, giddiness, or megrims, to falling down and lying some time insensible ; generally, however, without that convulsive struggling which takes place in the epileptic fits of the human body. The horse reels about and falls down, or rears up and suddenly falls. The muscles of the eye act irregularly or are affected with spasm, so that the eye is shockingly distorted and fixed during the fit. Sometimes he lies in a state of insensibility for several hours : the pulse continues to beat, and there is often a disturbed kind of breathing. Occasionally there is also a violent motion of the legs. The duration of the fit varies ; at one time terminating in a few minutes, at another continuing for several hours. During the fit, the horse should be bled by opening the temporal artery ; or if that cannot be done, let the neck vein be opened in the usual manner. Clysters and opening medicine are likewise proper. I have been informed of several cases of epilepsy

EPI—ERR

in the horse, that have been successfully treated by bleeding freely from the arteries of the tail, and giving a little cordial medicine. This disorder may sometimes depend, in some measure, upon the stomach and bowels being loaded; or, if it do not wholly depend on this cause, it must be greatly aggravated by it; therefore I consider clysters and opening medicines always proper. A rowel under the jaws, or a seton under the foretop, may also be useful. After the fit, the horse must be kept to a spare and rather opening diet, such as grass or bran; and if worked, it should be but very moderately. Horses that are subject to this disease cannot bear violent exertion of any kind, nor should they be allowed to load their bowels with dung by eating too much hay, or the straw used for their bed. A muzzle will effectually prevent them from doing this. I examined the brain of a horse that had had several attacks of this disease: they came on, indeed, whenever he was put into brisk motion, but lasted only a few minutes. There were about six ounces of water in its ventricles or cavities.

EPIPHYSIS. Any part of a bone joined to another by cartilage. Such are the heads of the large bones in young animals.

EPIFLOCELE. A hernia formed by a protrusion of omentum. See *Rupture* and *Omentum*.

EPISPASTICS. Blistering applications.

EPISTAXIS. Bleeding at the nose. This sometimes takes place in glanders, and denotes a considerable ulceration within the nostrils. When it happens to a horse free from glanders, it shows that there is too much blood determined to the head, and that opening medicine and a spare diet are necessary.

EPSOM SALT. Sulphate of magnesia. A neutral salt often employed in opening drenches for cattle; but not so convenient for horses, on account of the large dose necessary to produce a purgative effect.

ERRHINES. Preparations that cause sneezing, such as hellebore, tobacco, &c. Such compositions were supposed to do good in vertigo or giddiness. They are also called Sternutatories.

ERY—EXE

ERYSIPELAS. A disorder of the human skin; but I have never seen any thing of the kind in the horse.

ESCHAR. The slough formed by the application of caustic or the hot iron.

ESCHAROTICS. Mild caustics. See vol. ii. of *White's Farriery*.

ESSENTIAL OILS. Essential oils are obtained from vegetable substances by distilling them with water. It is thus we obtain oil of peppermint, oil of caraways, oil of cloves, &c.

EUPHORBIIUM. A very acrimonious gum-resin sometimes employed as an ingredient in blisters. I never use it, but I believe it is still considered by some practitioners as a good application to splents or bone spavins, when dissolved in a saturated solution of carbonate of potash. See *Splents* and *Spavins*: see also vol. ii. of *White's Farriery*.

EXCRESCENCE. Any preternatural formation on any part of the body; as warts, wens, splents, spavins, &c.

EXERCISE. It has been asserted by Mr. Clarke, an author of some eminence, that "a much greater number of horses that are high fed, and stand much at rest in close warm stables, die of diseases which are brought on them from the want of regular exercise, especially in great towns, than from any other class of diseases to which they are liable." I perfectly agree with Mr. Clarke in this opinion; and feel no hesitation in adding, that almost all the diseases of horses may be justly attributed to improper treatment or management; either in regard to feeding, exercise, state of the stable, or shoeing and general treatment of the feet. Though regular exercise is so salutary and even necessary to preserve the health of horses, they should not be suddenly put to such active exertions as they have not been accustomed to; for all sudden changes, whether from idleness to active exercises, or from these exercises to idleness, produce considerable changes in the system, and render both the solids and the fluids liable to disease. When a horse is gradually brought to that degree of exertion or labour in which he is to be employed, it becomes easy to him, and neither produces fatigue nor difficulty of breathing; and when

EXO—EXP

he has arrived at this state or habit of body, he is said to be in good wind and condition. But one great source of disease in horses is the improper treatment of them after they have been heated by exercise or hard labour: for though they come in covered with sweat, they are often exposed to the cold air uncovered, while their legs and thighs are washed with cold water; and not unfrequently they are allowed to drink freely of cold water while in this heated state. Hence arise inflammation of the lungs, bowels, or other internal parts; colds, chills, and a long catalogue of disorders which it is needless to enumerate.

The time and manner of regulating a horse's exercise deserve attention. Thus it would be imprudent to make a horse exert himself too suddenly immediately after he is fed and watered. It is likewise improper to exercise horses in the rain; or when they are unable to bear exertion, either from former fatigue, sickness, or lameness. The greatest caution is necessary in exercising horses that are very fat and unaccustomed to labour. If ridden hard in this state, internal inflammation, fever, chill, or molten-grease is likely to be the consequence. Horses in this state should have only walking exercise for a week or two: they should also take some mild purgatives or diuretics, and be fed rather sparingly. After this, their exercise should be gradually increased until their wind and condition are adequate to the work for which they are wanted. This subject has been more fully discussed in the 1st vol. of *Veterinary Medicine*, in the chapter on Feeding, Exercise, and Grooming, and in the preceding chapters on the Ventilation of Stables, and Condition.

EXOSTOSIS. A bony excrescence, of which the splent is an example.

EXPECTORANTS. Medicines that promote the discharge of mucus from the lungs by coughing, thereby curing or alleviating cough and imperfect wind or asthma. The principal medicines of this class are, squill, gum ammoniacum, galbanum, asafoetida, balsam of Tolu and Peru, balsam of sulphur, &c.

EXPECTORATION. The act of discharging mucus from the lungs.

EYE.

EXTRACT OF LEAD, or GOULARD'S EXTRACT. See *Lead*.

EXTRAVASATION. The escape of blood or other fluids from their proper vessels.

EYE. The reader would derive no advantage from an elaborate anatomical description of the eye, even if illustrated by plates: such knowledge can only be conveyed by exhibiting the eye itself, dissecting it minutely, and explaining the structure and functions of its various parts. I shall therefore give only a brief explanation of the subject, and that merely with a view to render more intelligible my description of the principal diseases to which this delicate organ is liable. The diseases of the eye appear to me to admit of three divisions: the first comprehending inflammation of the various parts of which the organ is formed; the second, the different degrees of opacity which take place in parts which are naturally transparent; and the third, the diminution or total loss of power in the retina and optic nerve. But previous to a consideration of these diseases, I will proceed to the anatomical description above alluded to. The parts which compose the eye are divided into external and internal. The external parts are, 1st, The eyelashes or *cilia*, which in the horse can scarcely be reckoned more than one, there being very few hairs in the under eyelid. 2. The eyelids or *palpebræ*, upper and under: where they join outwardly it is termed the External Canthus, and inwardly toward the nose the Internal Canthus: they cover and defend the eyes. The cartilaginous margin or rim of the eyelid, from which the eyelashes proceed, is named Tarsus. In the tarsus and internal surface of the eyelid there are small glands, which form an oily mucilaginous fluid, to prevent the attrition of the eye and its lids, and facilitate their motions. 3. The lachrymal gland, which is placed on the upper part of the eyelid toward the external canthus. The tears are formed by this gland, and conveyed to the inner surface of the upper eyelid by several minute ducts or canals named Lachrymal Ducts. 4. The *caruncula lachrymalis*, a small body of a glandular appearance in the inner corner of the eye: on each side of the caruncle there are small orifices, which are called *Puncta*

EYE.

Lachrymalia; these are the mouths or openings of two small canals, which, joining together, form a membranous tube, and this passing through a small opening in the bone, extends to the lower part of the nostril, where its termination may be distinctly seen in the horse. The tears formed by the lachrymal gland are diffused over the eye by the motion of the eyelids, and serve to preserve its transparency, to wash off dust or other extraneous matter, and to prevent any ill consequences from friction. As the lachrymal gland is constantly forming tears, it must be obvious that some contrivance is necessary to convey them off, and prevent their flowing over the cheek: this purpose is answered by the puncta lachrymalia and the tubes forming by their junction the lachrymal duct: through this canal the tears are conducted to the nostril. But when the eye is inflamed, or any irritating matter is applied to it, the tears are formed too abundantly to be carried off in this way, and then they flow over the cheek. In the human eye the puncta lachrymalia terminate in a small sac, from which the lachrymal duct proceeds: this is not the case in the horse. 5. In the inner corner of the horse's eye is placed a cartilaginous body commonly termed the Haw, no resemblance to which is to be found in the human eye. The horse has the power, by means of the muscles of the eye, to bring the haw completely over its surface; it serves, therefore, as a second eyelid, and effectually wipes off any dust, hay, seeds, or other matter which may have fallen upon the eye. 6. The conjunctive membrane, or *tunica conjunctiva*, which lines the inner surface of the eyelids, and covers the white part of the globe of the eye. This membrane has numerous blood-vessels, which are conspicuous when it is inflamed. Sometimes that part of the conjunctiva which lines the eyelids appears throughout of a red colour: this is generally the case in inflammatory affections of the lungs or other internal parts. The bulb or globe of the eye is composed of four coats and three humours. 1. The transparent cornea, which forms the front part of the eye, and in the horse comprehends a larger part of the globe than

EYE.

in the human subject, which is the cause, perhaps, of his seeing better at night than man. On removing the transparent cornea, a fluid, which is named the aqueous humour, escapes, and the iris appears. The iris is a muscular curtain, having a hole in the centre which is termed the pupil. The iris divides the fore part of the eye into two parts named Chambers, which are occupied by the aqueous humour. In the human eye, the pupil, or, as it is vulgarly named, the apple of the eye, appears of a black colour, and is of a circular form; but in the horse it is of a dark bluish cast, and of an oval or rather of an oblong form, the long diameter being in the horizontal-direction. In some animals, as the cat, the long diameter of the pupil is in a perpendicular direction. It is the aqueous humour that gives convexity to the transparent cornea, and enables the iris, which floats in it, to perform its functions. The iris regulates the quantity of light that is required to pass through the pupil. For this purpose it is composed of two sets of muscular fibres: by means of one the pupil is enlarged, and by the other it is diminished. Thus, if the pupil is first examined in the stable, where there is but a moderate light, and immediately after in the sunshine, it will be found wonderfully altered; becoming so small in a strong light as to be nearly closed. There is a peculiarity in the horse's iris, which is sometimes mistaken for a disease; that is, in the upper part of the pupil, suspended from the rim of the iris, there are small black substances, the use of which has not hitherto been ascertained. On removing the iris, the second humour or crystalline lens appears: this is retained in its situation by a transparent membrane named its capsule, between which and the lens is a minute quantity of fluid. The crystalline lens is of a double convex form, and, in health, is perfectly transparent. Its outer part is rather soft, but it is found to become gradually harder towards the centre. The use of the lens is to afford, by the refraction of light, a focal point on the retina. To produce perfect vision, the focal point must vary: this change is readily accomplished by the motions of the iris. The third humour of the eye is the vitreous. This humour is not contained in

EYE.

one general sac, but in numerous minute and perfectly transparent cells, and resembles pure water. The vitreous humour serves to produce a small degree of refraction in the rays of light, and occupies and distends all the posterior part of the globe of the eye. Of the four coats of the eye, only the transparent cornea has been described. The next to this is the sclerotic coat, or white of the eye, a strong thick membrane, which extends from the transparent cornea to the optic nerve. The next coat to the sclerotic is the choroid. This is a delicate and very vascular membrane. In the human eye it appears of a black colour, from a black mucous substance, called *pigmentum nigrum*, which covers it; and it is this which causes the pupil of the human eye to appear black: but the choroid coat of the horse's eye is variegated in colour; in some parts black, in others bluish and beautifully green. From this, the pupil of the horse's eye appears of a dark bluish colour. The third coat is the retina. This is a delicate expansion of the optic nerve over the choroid coat, which it accompanies to the margin of the crystalline lens, and there terminates. The use of the retina is to receive certain impressions made by the light reflected from objects, so as to produce in the mind an idea of their figure and colour; the optic nerve being the medium of communication between the retina and the brain. From the above view of the mechanism of the eye, it will readily appear, that many circumstances may occur to render vision imperfect, or to destroy it altogether. If the transparent cornea, for example, becomes opaque in consequence of inflammation, light could not pass through it, and the animal would be blind, however perfect the other parts of the eye might be. There are many shades, however, between perfect transparency and absolute opacity, producing a proportionate degree of imperfection in vision. The cornea may be either too convex or too flat: in the former case, causing the animal to be near-sighted; in the latter, producing an indistinctness in vision with respect to objects that are near. The iris may, in consequence of inflammation, become fixed, or lose its power of motion; in which case

EYE.

the pupil would be always of the same size, and the animal would not have the power of adapting it to the various distances of objects : or, as it sometimes happens, the pupil may become quite closed, by which light would be perfectly excluded from the retina. Supposing the cornea and iris to be healthy, the crystalline lens, or its capsule, may become opaque, and thereby cause total blindness. But in this part, as in the cornea, we meet with different degrees of opacity : sometimes it is very slight, the pupil appearing of a lighter colour, and unusually large : in this state the pupil is said to look dull or muddy, which causes the horse to start ; but when the opacity is complete, it constitutes the disease termed Cataract. It often happens in horses, that one or more whitish spots are formed either in the lens or its capsule, the other parts remaining transparent. If these opaque spots are small, and do not occupy the centre of the pupil, they may not materially interrupt or impede vision. The vitreous humour does not often become opaque, but it is sometimes disorganized ; that is, the cells are broken down, and it is rendered rather turbid by mixing with the black pigment of the choroid coat : but this, I believe, seldom happens, except when there is a complete cataract, and then it is commonly found in this state. From this circumstance, and from what I have before observed of the use of the crystalline lens, it will readily be seen, that the operation either of couching or extracting the cataract or opaque lens must be useless in the horse ; for if the vitreous humour remain perfect, the grand refractor of the eye is lost ; and though light can pass to the retina, vision would be so confused and imperfect, as to render the horse more dangerous to ride than one that is totally blind. In the human eye, the loss of the crystalline lens may be supplied in some measure by glasses, and a useful degree of vision is often restored, either by couching or by extracting the cataract. If every humour of the eye were transparent, the cornea of a proper degree of convexity, and the iris perfectly healthy ; still, if the retina had lost its power, the animal would be blind, with scarcely any prospect of recovery. This defect in the retina constitutes the dis-

EYE.

ease named *Gutta Serena*, or *Amaurosis*. This disease is known by the pupil being unusually open or large, and by its continuing so when the eye is exposed to a strong light. The iris, however, does not lose its power totally, particularly in the human eye, but appears to be influenced more by an effort of the animal than by the stimulus of light. I shall now proceed to a consideration of those diseases of the eye which admit either of cure or palliation. Young horses, generally when about five years old, are peculiarly liable to inflammation of the eye, which, in medical language, is named *Ophthalmia*: such as are got by a blind stallion, or bred from a blind mare, are said to be more liable to it than others. That this hereditary tendency to *ophthalmia* often occurs cannot be doubted; and it seems equally certain, that the eyes of some young horses are naturally weaker and more susceptible of disease than those of others, independent of such hereditary tendency. I am inclined to think, that in gray horses, and those of the black cart-breed, we more frequently meet with bad eyes than in horses of other colours. But all young horses, of whatever breed or colour, if pent up in hot close stables, fed high, and not sufficiently exercised, are liable to inflammation of the eyes; and when once this disease has occurred, there is great danger of its terminating, sooner or later, either in partial or total blindness. On the first attack of this disease, the inflammation is generally confined to the conjunctive membrane. The eyelids are partly closed, the tears are formed so abundantly as to flow over the cheek, and the haw often becomes more conspicuous, covering some part of the cornea. Sometimes the inflammation comes on in a more violent degree, extending to the cornea and iris. Not unfrequently we observe lymph or matter in the lower part of the anterior chamber of the eye, that is, under the cornea, which has been effused by the vessels of the iris; and sometimes even the cornea becomes opaque, and of an obscure and red colour somewhat resembling blood. It often happens that one eye only is at first attacked, and when this is getting better the other is often suddenly affected. Sometimes the eyes appear to

EYE.

get quite well, and continue so for several weeks ; but in general they are unexpectedly and suddenly affected again. The disorder often continues in this fluctuating state a considerable time before the crystalline becomes materially affected : in some instances, however, the cataract has formed rather suddenly. It generally happens that, when the cataract has taken place, the inflammation of the conjunctiva and other parts ceases, and does not again return ; and if a complete cataract forms in one eye only, the other usually becomes strong and healthy, and is seldom afterwards attacked by inflammation, except from blows or other accidents. From the frequent occurrence of this circumstance, farriers have been led sometimes to destroy one eye, with a view to restore and secure the other. This practice Mr. Feron, and some other veterinary writers, have condemned as cruel ; which censure it certainly merits, if not productive of the expected advantage.—I have tried it once only, and in that case it succeeded ; that is, the last time I saw the horse, which was more than six months after the operation had been performed, one eye appeared perfectly healthy, and in the other there was a complete cataract. I do not know in what manner farriers “ put out the eye,” as it is termed, but suppose they thrust a knife into the cornea, and make an opening through which all the humours of the eye are forced out. The method I pursued was different : it gave the animal very little pain, and left only a small blemish. Having steadied the eye with a suitable instrument, and the under eyelid being kept down by the finger of an assistant, the common couching needle was passed through the sclerotic coat, about the eighth of an inch from the edge of the transparent cornea, and continued forward until it was seen in the pupil : when in this situation, it must of course be in the substance of the crystalline lens. After moving the point of the needle gently upward, downward, and backward, it was withdrawn. Nothing was afterwards applied to the eye. I have several times performed a similar operation on horses that have had complete cataracts ; not from an expectation of doing any good, but merely to show how little

EYE.

pain it occasioned, and that it was not followed by inflammation or any ill consequence. One object, I am inclined to think, may be accomplished by this operation, if performed when the cataract is recent and not accompanied with disorganization of the vitreous humour; that is, it may restore such a degree of vision to farm-horses, or such as are not of sufficient value to be kept in a stable, as will enable them to avoid the danger of falling into pits or ditches when at grass. But to effect this, it is necessary to carry the point of the needle through the pupil, and of course through the fore part of the capsule of the lens, so that it may be seen in the anterior chamber: in this situation it is to be moved gently (taking care not to touch the iris), so as to make a small opening in the capsule: some of the opaque lens will then, perhaps, be gradually absorbed; so as to allow a small quantity of light to pass to the retina. I have before observed, that we often meet with cases where one or more small whitish or opaque specks may be seen in the pupil, the other parts remaining transparent; and that when such specks are not large, and do not occupy the centre of the pupil, they do not materially interrupt vision. I have now to observe, in addition to this, that I have many times remarked, that when such specks have formed, the ophthalmic inflammation has been permanently removed, as it usually is by the formation of a complete cataract; but this does not so generally follow in the former as in the latter case. It has been said, that these specks generally increase gradually, until the whole of the lens becomes opaque, or a complete cataract is formed; but I have not seen this happen in any one instance, though it is a subject I have particularly attended to. I have often examined eyes with such specks from time to time for several years, but do not recollect a single case in which they appeared to increase; however, it must be recollected, that I mean those cases only in which the formation of the specks has been followed by a cessation of the ophthalmia. The difficulty, perhaps we may venture to say the impossibility we often experience, of effecting a radical cure of

EYE.

ophthalmia in horses, or rather of preventing it from terminating in partial or total loss of sight, has led many practitioners to conclude that it is a specific kind of inflammation peculiar to the horse's eye. According to Mr. Feron, "this disease may, in fact, be considered as a gouty inflammation of the eye, peculiar to the horse; being a periodical disease, and having the same appearance and affections in the horse as the gout in the human subject." Mr. Blaine says, "In the human subject, this complaint generally attacks both eyes at the same time; but in the horse one only is sometimes affected, and that not unfrequently; but it seldom remains permanently fixed to one eye, but shifts to the other, leaving the original nearly well: this has induced Mr. Coleman to consider it as a *specific gouty affection*." Mr. Richard Lawrence, in his *Inquiry into the Structure and Economy of the Horse*, seems to view the subject in a different light. He observes, "Inflammatory attacks on the eye of the horse, eventually producing blindness, are so general as almost to sanction a belief that he is naturally more subject to this infirmity than any other animal. Such a supposition, however, would tend more to arraign the wisdom of Providence, than to throw any light on the subject. A difference in the perfection of the eye, as well as of other parts of the body, certainly prevails among different horses, but not to such a degree as to occasion blindness, provided the animal remained in a state of nature. Unnatural confinement in hot and dark stables, the constant costiveness produced by dry food, and, more especially, a general derangement of the system, brought on by violent and excessive exertions, are undoubtedly the primary causes of diseased eyes." I perfectly agree with Mr. Lawrence, but would add to the causes he has enumerated, over-feeding without sufficient exercise, and standing still in cold wind or rain when the animal has been heated, and is sweating from violent exercise; also plunging him into a river when sweating and exhausted by exertion, or tying him up at the stable door while his legs and thighs are washed with cold water. I do

EYE.

not consider the inflammation of the horse's eye, or the ophthalmia, to be of a specific or peculiar nature, nor does it appear to me to resemble gouty inflammation. If we consider the unnatural state in which horses are kept, and how frequently the evils which necessarily attend domestication are aggravated and increased by neglect, cruelty, and ill management, we need not be surprised that so delicate an organ as the eye should so frequently suffer. When a horse is attacked with ophthalmia, and particularly if the inflammation is considerable, the vessels of the eye will be weakened in a certain degree; and though the disease may be in a short time removed by an immediate application of proper remedies, yet the eye will be more liable to ophthalmia than it was before the attack. But it often happens, that suitable remedies are not so seasonably applied; and as soon as the eye gets better, the horse is generally again exposed to the very same causes by which the disease was originally produced. There appears to be no difficulty, therefore, in accounting for the frequent occurrence of ophthalmia in the horse, or for its so often producing blindness. It must be obvious, from what has been said on this subject, that it is of the utmost importance, in the first place, to adopt that system of management, with respect to feeding, exercise, grooming, ventilation, &c., which is most likely to prevent ophthalmia, and to have immediate recourse to the most efficacious mode of treatment; for it should be recollected, that it is from this primary inflammation that almost all the other diseases of the eye proceed. Authors have not differed very materially as to the treatment of ophthalmia. Mr. Richard Lawrence advises "two or three quarts of blood to be taken, the bowels to be kept in a laxative state by giving about four drams of aloës night and morning till they operate;" the horse to be fed with bran mashes, and the same precautions attended to as are generally observed in physicking. He thinks the best lotion that can be applied is a mixture of one-fourth vinegar and three-fourths water, to be used with a clean sponge and light hand very frequently. He advises, also, a rowel to be placed under the jaw, and a

EYE.

blister applied to the cheeks, together with regular exercise, just sufficient to produce a moisture on the skin. Mr. Blaine says he has "very generally succeeded in a temporary removal of the attack by local and general bleeding, by blisters to different parts of the head, and other means used against inflammation; and when the inflammation has been less active, by the introduction of laudanum, of calomel, and of other substances within the eyelids; aided by mercurial frictions," &c. He observes also, that "unless a horse is very plethoric and fat, general bleeding should not be attempted more than once; but that local bleeding may be persisted in as long as the inflammation continues active:" this he advises to be done by dividing the vessels of the conjunctiva with a lancet, or with a pair of very fine scissors. He thinks leeches may be applied with propriety. Considerable benefit, he says, has sometimes followed the use of setons, placed as near the eye as possible; and in some instances they have been passed through the conjunctive membrane, that is, just under the transparent part in the white of the eye: a rowel may likewise be put under the throat. When the eye is extremely irritable, he recommends a cold poultice mixed with a weak solution of lead: and when there is but little irritability, he thinks stimulating lotions may be used with advantage; as solutions of white vitriol or alum, tincture of opium, diluted brandy, &c. For the purpose of relaxing the skin and promoting perspiration, he advises warm clothing to be used, and a ball to be given night and morning composed of

Tartarized antimony, one dram.

White antimonial powder, one dram.

Nitre, six drams.—To be formed into a ball with lard.

He recommends, also, ventilating the stable, and the removal of every source of noisome effluvia. Mr. Denny also advises the application of a cold poultice mixed with lead-water (perhaps a weak solution of acetate of lead, or Goulard's extract diluted with water), and taking off four or five pints of blood. He then directs a purgative to be given, composed of one ounce of aloës and two

EYE.

drams of ginger; with a rowel under the jaw, low diet, and after the operation of the purgative, a powder, consisting of six drams of nitre, half an ounce of anise-seeds, and one scruple of antimonial powder. Mr. Feron seems to consider the disease incurable: for he says, "If the animal is bled, purged, &c., the eye soon becomes clear; but, at the end of a few weeks, the other eye becomes inflamed: this also gets clear; and about the same period afterwards, the eye that was originally inflamed, now again becomes affected, and so on periodically, until the patient is totally blind in one of them." After noticing some unsuccessful experiments made at the Veterinary College, he observes, that "the treatment is confined entirely to bleeding, purging, and diuretics; fomentations of warm water, and plenty of moderate and continual exercise, so as to increase the perspiration." My experience in this complaint has led me to consider bleeding, to the extent of four or five quarts, as the first and most essential remedy; and in doing this I feel no dread of producing debility, a circumstance of which Mr. Blaine seems so apprehensive. I do not approve of scarifying the conjunctiva, having generally found that the inflammation is rather increased than diminished by it. Fomentations of warm water, when the eye is much inflamed, have generally afforded relief. I have several times seen a seton, inserted in the conjunctiva of the upper eyelid, tried, but it only served to increase the inflammation, and give the animal a great deal of unnecessary pain. Mr. Coleman, I believe, first adopted this plan, but it was very soon given up. A mild purgative, on the first attack of the complaint, I consider useful; but after that, mild diuretics appear to be more beneficial. The best method, perhaps, of exhibiting them, is in small and repeated doses, so as to keep up a moderately increased action in the kidneys. I have generally found a mixture of powdered resin and nitre, half an ounce of each, answer this purpose completely, if given at first twice a day, and afterward only once, or so as to make the horse stale more than usual, but not so much as to cause weakness or endanger the kidneys. Should the horse refuse to take the powder in his bran

EYE.

mash (no corn should be allowed), it may be formed into a ball with a little flour and syrup. Three hours' walking exercise daily will be found useful: a cold easterly wind, dust and rain, should be avoided. A light shade of silk may be so adapted to the head as to keep off the direct rays of the sun during the time of exercise. A seton, placed immediately under the eye, has often done good, particularly when the conjunctiva is much inflamed and swollen. I have found the seton more speedily effectual, when the tape is smeared with blistering ointment; but it should be that part of it only which is under the skin. Blistering the cheeks would be useful, were it not that the horse is apt to rub the part against the stall or manger: I have, several times, known the blister get into the eye in this way, and aggravate the inflammation considerably. When the inflammation has abated, the following lotion may be substituted for the fomentations of warm water:

Sulphate of zinc, two drams.

Acetate of lead, three drams.

Water, one pint and a half.

Powder the first two ingredients, and put them into a bottle with the water; shake the bottle for a short time, and then filter through blotting paper. This lotion should be perfectly transparent, and applied to the eye several times a day by means of a clean sponge. If the eye continues weak, and the sight imperfect, after this lotion has been used four or five days, a little brandy may be mixed with it; about four parts of the lotion to one of brandy: this may be introduced under the eyelids, by separating them gently with the finger and thumb, and squeezing a small bit of clean sponge, that has been dipped in the mixture, close to the eye. When the inflammation has subsided, a slight degree of opacity sometimes remains in the cornea, which is generally removed by the above mixture; but it may be found necessary, in some cases, to make it a little stronger by the addition of brandy. The same mixture may be used when the pupil is unusually open, and rather of a lighter blue colour than we commonly find it; or, as it is often termed, muddy or cloudy. When the pupil is contracted

EYE.

or very small, even in the stable or a moderate light, and appears to be uniformly the same in different degrees of light, or if it appears irregular in its form, a small quantity of the extract of belladonna may be introduced under the eyelids. If this does not enlarge the pupil in the course of three or four hours, it should be repeated; but when this effect has been produced, no more should be applied until the pupil again contracts. In gutta serena, or a loss of power in the retina or optic nerve, there is scarcely any chance of a cure. Bleeding, purging, and the application of stimulating powders to the nostrils have been recommended. In blows or other external injuries of the eyes, violent inflammation often takes place; and there is generally a complete opacity of the cornea, and a high degree of inflammation in the conjunctiva. In such cases, by bleeding freely, giving a mild purgative, and fomenting the eye frequently with water at about blood heat, or with the lotion before prescribed, made warm and diluted with an equal quantity of water, the inflammation will gradually subside; and when that point has been accomplished, the undiluted lotion with brandy may be used, should any opacity remain. I have sometimes found it necessary to use stronger stimulants in opacity of the cornea, as common salt in fine powder, or even finely powdered glass mixed with honey and placed under the eyelids. I have lately been led to think that ophthalmia depends greatly on constitutional weakness, induced by bringing horses into work, and often hard work, at too early an age; and that the disease itself consists in weakness of the nervous structure of the eye. From this view of ophthalmia, we are enabled to account for the obstinacy of the complaint under the most judicious treatment. This constitutional weakness, and consequent morbid sensibility of the eyes, is often, I believe, derived either from the sire or the dam, or from both; therefore, in order to prevent the disease, it is necessary to breed from healthy parents, as well as to avoid the common practice of breaking young horses and bringing them into work at too early an age. I have also observed, that the best method of treating ophthalmia is to attend to the general health of the ani-

FAINTING.

mal; and in cases where the constitutional weakness is not considerable, I have found, that by giving the horse a laxative ball, and keeping him on a cooling diet for a short time, the inflammation has quickly subsided; while, in other cases, no relief has been afforded by copious bleeding, purging, blisters, setons, rowels, and eye-lotions: but when the practitioner gives up the use of remedies, the disease, after a time, gradually gets better. In a regiment of dragoons, I believe the Ninth, the veterinary surgeon assured me, that the most effectual treatment he had ever tried was to rub some blistering ointment all over the eyelids and surrounding parts, without using any precautions to prevent it from getting into the eye. Mr. Coleman has observed, that strong physic will sometimes bring on ophthalmia, and I have made a similar observation; but, in such cases, there was, probably, some degree of constitutional weakness; so that, by drawing an unusual quantity of nervous power to the bowels, the brain was incapable of affording a sufficient supply to the eyes, which caused a morbid sensibility, and, consequently, inflammation. In obstinate cases of ophthalmia, I consider the putting out of one eye as the most probable means of saving the other; for the brain may be able to supply one eye with sufficient nervous power, when it cannot furnish enough for both. I have thought it necessary to enter thus fully into a consideration of the diseases of the horse's eye, as it is a subject of importance; and, in concluding, I beg to remind the reader, that it is much easier to prevent the disease by a proper system of stable management, than to cure it; and, if it does occur, the only chance of curing it permanently is by an early application of proper remedies. Diseases of the eyes of cattle almost always are caused by external injuries, and are to be treated in the manner I have just described.

F.

FAINTING. In the inflammatory complaints of horses, such as inflammation of the lungs or any other vital organ, it is essentially necessary to bleed until the horse

FALLING DOWN OF THE CALF-BED.

becomes faint. Faintness is first shewn by the pulse becoming feeble, by the dulness of the eyes, by the horse trembling and sometimes neighing, and, afterwards, by his reeling or staggering and falling down. In whatever degree fainting may take place on such occasions, no danger need be apprehended from it; on the contrary, it affords a satisfactory proof that we have drawn as much blood as is necessary at that time. A horse soon recovers from fainting, provided the bleeding be stopped; and the only thing necessary is to leave him to recover gradually.

FALLING DOWN OF THE CALF-BED. Inversion of the womb. This accident occurs, sometimes, immediately after the extraction of the calf, particularly in difficult labours, or when much force has been used in the delivery of the animal. It may also happen from the cleansing remaining in the womb after delivery, which generally causes the cow to lie down and strain. This accident is more likely to happen when the floor of the cow-house is lower behind than before: when this is the case, the animal should be removed to another place, or the floor so raised that the cow's hind parts may be rather higher than the fore parts. If any dust or bits of straw are observed about the womb, they should be carefully removed; and if the placenta or cleansing still adheres, it must be gently separated, before any attempt is made to put back the womb. A linen cloth is to be put under the womb; which being held by two assistants, the cow should be made to rise, that being the most favourable position. The operator is then to grasp the mouth of the womb with both hands, which will enable him, by gently pushing forward, to force that part into the body of the cow: when so returned, one hand is to be immediately withdrawn, while the other remains to prevent the part from falling down again. The hand at liberty is then to grasp another portion of the womb, which is to be forced into the body like the former, and retained with one hand: this is to be repeated until the whole of the calf-bed be put back. In grasping these different portions of the womb, it is to be particularly observed, that it must be taken by its upper surface, or that lying

FALLING OF THE FUNDAMENT.

next the back of the cow; for, if grasped at the under part, it would be impossible to return it, and there would be danger of wounding some large blood-vessel. During the operation, the assistants must be careful to support the womb, and on no account suffer it to hang down. If the cow cannot be made to stand during the operation, the hind parts should be raised by placing some trusses of straw under them. When the operation is finished, the hand is to be thrust gently up to the bottom of the womb, and kept there until the parts have regained their natural situation, which will be known by moving about the hand. When the womb has been properly returned, it seldom falls down again. Some farriers, however, put two or three stitches in the shape as a preventive. Mr. Clater recommends, for this purpose, the passing a piece of wire through the "lips of the womb." In old cows whose parts have been much weakened or relaxed, and where the accident has occurred several times, some expedient of this kind may, perhaps, be necessary. It would be proper, however, to try first if it could be effected by means of a pessary. (See *Pessary*.) After the operation, Mr. Clater, *very considerably*, for he is a druggist, directs an expensive drench to be given, which, in my opinion, is much more likely to do harm than good: *sed utilis est sibi*. Sometimes the vagina falls or becomes inverted, but it is easily replaced; and farriers usually put two or three stitches in the shape, to prevent its returning: in this operation, also, if the cow be in a stall, she should be made to stand higher before than behind. The only medicine that can be necessary in either of these cases is some laxative drench or clyster, if the bowels are not sufficiently open: and, when the straining is so considerable as to render it impossible to replace the womb, an anodyne or opiate clyster should be thrown up; and if this fail, from half an ounce to an ounce of tincture of opium may be given as a drench. See *Clyster*.

FALLING OF THE FUNDAMENT. *Prolapsus ani*. This is sometimes occasioned by a long-continued looseness, and is most likely to happen to animals of a weak constitution: it is often brought on by giving too strong physic, and some-

FAL

times by over-exertion. Mr. Lawrence says he has often seen it in hard-driven pigs. When the gut comes down, it is to be gently replaced, and then kept in by pressing a pad of cloth firmly against the fundament. But if the animal continues to strain and force out the gut, give a dose of castor oil, and throw up an emollient clyster; after which, replace the gut, and endeavour to confine it as before directed. Should this fail, bathe the protruded intestine with a watery solution of opium, or inject an opiate clyster. If this treatment do not afford relief, give half an ounce of tincture of opium in some water. I once met with a case of *prolapsus ani* which proved fatal. After death, an immense tumour was found in the abdomen, as large as a man's head.

FALLING SICKNESS. See *Epilepsy*.

FALLING OF THE YARD OR PENIS. *Paraphymosis*. This disease sometimes happens to horses and bulls, in consequence of inflammation or swelling and ulceration of the parts, sometimes of an obstinate or malignant nature. It may also be occasioned by too frequent sexual intercourse, or by the exhibition of cantharides. Let the sheath or prepuce and yard be well cleansed with warm water and soap, and afterwards well fomented with hot water. If there are any ulcers, let them be washed with a solution of corrosive sublimate—from ten to twenty grains in half a pint of water, with a few drops of spirit of salt, or muriatic acid, to promote the solution of the sublimate. A few applications of this lotion, or touching the ulcers with lunar caustic, will bring them to a healthy state; after which, they will get well without any further trouble. A solution of blue vitriol will often be found strong enough to cure such ulcers; but the sublimate is most effectual. As this disease may sometimes be connected with farcy, or dependent on a bad state of health, some alterative medicine will be proper; such as Ethiop's mineral, three or four drams, twice a day, until the disease be cured, or the medicine appear to disagree with the animal. (See *Farcy*.) Falling down of the penis may depend also on weakness of the part; and when this is the case, there is neither ulceration nor inflammation. In this case, the

K

FAL—FAR

sheath or prepuce should be examined with the hand, and cleansed with soap and water, should it be found necessary. Cold water may then be thrown on the penis from time to time, until the animal be able to draw it up; and it may be supported by a strap or bandage, passing over the back and under the belly. In obstinate cases, puncturing the penis in several places, and then washing it with vinegar, has been recommended; but I should be loth to have recourse to this operation, especially upon a covering stallion.

FALSE QUARTER. A fissure or cleft in the hoof, generally in the inner quarter. It may be caused by a wound in the coronet, and is often a consequence of quittor, pricks in shoeing, and sandcrack. It sometimes happens that the wound in the coronet or coronary ligament is not sufficient to prevent it from forming horn, but causes an irregular secretion of horny matter, so that there is not a fissure but a line of imperfect horn, accompanied with tenderness; which, unless the pressure of the shoe be taken off from that quarter, often causes a horse to go lame. The treatment consists in blistering the affected part of the coronet, and a little above it, and taking off the pressure of the shoe from that quarter of the hoof, in the manner described in the article *Corns*. See *Sandcrack*.

FARCY. This was formerly considered as a disease of the superficial veins, which, in the language of farriers, became knotted and corded. It has been ascertained, however, by Mr. Coleman, that it is an affection of the lymphatic or absorbent vessels. Its most usual form is that of small tumours, or *buds* as they are termed, about the legs, inside of the thigh, neck, face, and other parts: the buds are at first hard, but gradually become softer, and at length suppurate and burst, and become a foul ulcer. Between the ulcers or buds there is generally a line of communication, or what farriers term a corded vein is seen; which is, in fact, an inflamed lymphatic or absorbent vessel. (See *Lymphatics*.) When the farcy bud has burst, or has been opened, it sometimes spreads under the skin, forming what are termed sinuses or pipes: these should always be laid open with the knife

FARCY.

through their whole extent, except when they occur about the joints or tendons; in which case they generally occasion lameness, and are difficult to cure. Sometimes the farcy comes on in a more violent and malignant form: there is a prodigious swelling of the legs or other parts; foul spreading ulcers appear; the nose swells and discharges stinking matter: there is also considerable fever, and the horse soon falls a victim to the disorder. This malignant form of farcy, however, is not very common. When no remedies are applied, the farcy ulcers usually spread; but by dressing them with caustics, and laying open any sinuses there may be, they gradually heal, and the horse often appears to be cured. This apparent cure may continue from two or three weeks to several months; but it is generally followed by glanders. In some instances farcy is merely a local disease; and in such cases, if proper remedies are seasonably applied, it may be radically cured, without being succeeded by glanders. The farcy sometimes attacks horses that are in good condition, and without any previous illness; at others it is preceded by various symptoms of constitutional derangement. In some cases the horse gradually loses flesh and strength, the coat becomes dry, the skin sticks close to the ribs, and the legs swell. These symptoms are followed by the appearance of farcy buds, and soon after by glanders. When farcy attacks a horse that is in good condition, there is a probability of its being cured by a proper mode of treatment; particularly if the buds are not numerous, and confined to the fore legs, without affecting the joints or tendons. Topical applications alone ought never to be depended on; but the following ball should be given morning and evening, provided it neither occasions sickness nor uneasiness of the bowels.

BALL FOR FARCY.

Sulphate of copper (blue vitriol), from one to two or three drams.

White arsenic and sublimate, of each, from ten grains to a scruple.

Powdered cascarilla bark, from one dram to two.

Oil of caraway-seeds, twenty drops.

FARCY.

Linseed meal, half an ounce.

Venice turpentine, enough to form a ball.

When the buds become soft and appear to contain matter, they should be opened and dressed with some caustic preparation; as solution of sublimate in muriatic acid, with the addition of spirit of wine and water, in the following proportions:

Corrosive sublimate, one dram.

Muriatic acid, three drams.

Spirit of wine, one ounce.

Water, half an ounce.

First mix the sublimate and the acid, then add the water, and lastly the spirit. This is a strong preparation, and need be applied only once or twice, provided the bud has been completely laid open, so that every part of the diseased surface may be exposed to its action. After this, the sore generally heals of itself. Some practitioners use lunar caustic, powdered blue vitriol, with red precipitate and burnt alum: in fact, any caustic preparation will answer the purpose. Blistering the corded lymphatics has also been recommended. The horse's diet should be nutritious, but rather of an opening nature, as bran mashes, with oats or malt, carrots, vetches, or lucerne: his water should be at the summer temperature, or have the chill taken off. Regular exercise is necessary; taking care to avoid rain and cold winds, and clothing according to the season during the time of exercise. By adopting this mode of treatment at an early period, a cure may often be effected, provided the horse be in good condition, and not previously diseased: but the use of proper remedies is too often delayed until the poisonous matter has been absorbed; and then, though the farcy may be completely healed, and the horse apparently cured, I have generally found that he has eventually become glandered. In some instances, there has been an interval of several months between the supposed cure of farcy and the appearance of glanders. As to the cause of farcy, we only know that it may be produced by inoculating a sound horse, in any part of the body, either with matter taken from the nose of a glandered horse, or from a farcy bud when first

FARCY.

opened, or to which no caustics nor other dressings have been applied. It may also be produced by rubbing glanderous or farcy matter upon a common sore on the body of a sound horse: but in this case the disease does not so readily take place; and, though the sore generally assumes a different appearance after the poisonous matter has been rubbed on it, appearing at first indisposed to heal or even to spread, yet after a short time it often heals spontaneously, and is not followed by glanders. Farcy sometimes appears in a horse that has for some time been glandered; and if a sound horse be suffered to feed or drink with one that is glandered, the first symptoms of his being infected by such communication will sometimes, but not often, be the farcy. The farcy, however, frequently takes place where there has been no known communication either with a glandered or a farcied horse: in such cases, the disease is perhaps produced by some cause with which we are unacquainted. However, it appears to me that farcy is generally caused by accidental inoculation with the matter discharged from the nose of a glandered horse; and when we consider that it most commonly occurs in situations where the bones are prominent, and how slight a scratch with a currycomb is sufficient for the purpose, it must be admitted that there are strong grounds for this opinion. If a young ass be inoculated with glanderous matter on the inside of the leg, it will produce corded lymphatics and farcy buds as far up as the groin, precisely similar to the farcy when it happens spontaneously; and this inoculated farcy is always followed by glanders. It is a general opinion among veterinary surgeons, both in this country and on the continent, that farcy may arise from other causes than direct contagion; and the principal of these are bad food and close offensive stables. I have certainly met with cases of both glanders and farcy, that have appeared to arise from one or both of these causes, and have likewise seen farcy attack a horse that had for some time been losing flesh; but in no single instance was the nature of the disease put to the test of experiment, by inoculating a young ass with the matter discharged from the farcy sores; and there could not be

FAR—FAT

any certainty of the horses not having been accidentally exposed to contagion (although their proprietors were satisfied this was not the case), as glanderous matter might have been swallowed or applied to the body some months previous to the appearance of the disease; for though young asses are quickly affected by the slightest inoculation, and soon become glandered, it is not unfrequently a very long time after contagion before the disease manifests itself in horses, especially in such as are old, or of strong constitutions.

Dropsical and inflamed swellings of the hind leg are sometimes, but improperly, called *water farcy*: they are of a very different nature from farcy, and much more easily cured. See vols. i. and iii. of *White's Farriery*.

FARDEL-BOUND. See *Costiveness*.

FARRIER. A name derived from the Latin word *ferrarius*, signifying a worker in iron. The term is therefore applicable to those who make and apply the horse's shoes. However, the appellation of *farrier* generally implies a person who takes upon himself not only the office of a shoeing-smith, but likewise that of prescribing for the diseases of horses, and performing some of the most common operations of veterinary surgery.

FASCIA. A thin sheet of tendon, which covers muscles, and serves to bind them down and keep them in their situation.

FAT. The fat of the body is a secretion from the blood, and, in the living animal, serves as a resource in cases of sickness and loss of appetite. When an animal fasts for some time, the fat of the body is absorbed, and applied to the various purposes for which it is required in the animal economy. Animals that sleep during the winter, as the dormouse, are very fat when they retire for that purpose, but very lean when they awake in the spring.

FATIGUE. Weariness. That horses should feel tired after a day's hard work, is nothing more than is fair and reasonable; but it is not sufficiently known, that when a horse is in this state, and especially if he be much exhausted by heat and sweating, the sudden application

FATIGUE.

of cold to the skin or to the stomach is productive of the most serious consequences. The disease thus induced is commonly named a *chill*, but is of a highly inflammatory nature, and requires copious bleeding. Excessive fatigue is very injurious to the constitution, and, when often repeated, causes a considerable and permanent depression of the muscular and nervous system. (See *Debility*.) The stomach, as a muscular cavity, participates in this depression; and its digestive function, which depends on its nervous power, suffers in the same proportion. The diseases which result from working a horse immoderately or unfairly are often very gradual or slow in their accession and progress, and those of hardy constitutions may go on for years without any marked disease being produced; but it is by such indiscretion and improvident use of the animal, that his life and services are so much abridged as experience proves them to be. The life and services of this useful animal are two distinct objects, for there are few horses that are worked unfairly, which do not require now and then the attendance of the veterinary surgeon, and a suspension of labour; and many are rendered nearly, if not quite, useless for the last two or three years of their lives. It is the fashion to attribute the frequency of founder, contracted feet, or chronic lameness as it is termed, to bad shoeing; whereas the truth is, the English smiths are the best shoers in the world. It is the immoderate work horses are made to do, aided by high feeding and hot stables, standing constantly upon litter, and sudden changes, such as coming from snow or ice water to the hot litter of the stable, that begets the disease, and causes the incurable lamenesses we so often meet with. The French may have a better method of nailing the shoe, but I cannot perceive any advantage in their form of it, or what they term its *ajusture*. (See *Shoeing*.) The general practice of bringing colts into work two or three years before they arrive at maturity, lays the foundation of almost every disease to which they are subject. After a hard day's work, a horse should be cleaned in the stable, and not tied up at the door or in the court, perhaps in a cold air, to

FATTENING.

have his legs and thighs washed, and too often his body also. In warm summer weather this may not do any harm; but it is often practised even in winter. A weary horse should have his feet picked out, as there may be stones in them; but there is danger in washing them with cold water. He should have a little warm water to drink, and two or three handfuls of corn. He should then be well rubbed over, afterwards have another small feed, and be well littered and left to repose. The more quiet the stable the better. After a few hours' rest, he may be fed again and brushed over, taking care to rub his legs well, especially if they are cold. If the fore feet are hot, they should be stuffed with cow-dung; and if inflamed and tender they should be wrapped in a large bran poultice.

FATTENING. The art of fattening horses for sale has been found productive of so much loss through inflammatory diseases, that dealers in general appear to have discontinued it. This is another circumstance in support of an observation I have several times had occasion to repeat, that it is the interest of all proprietors of horses to feed and exercise them properly. It reminds us also of that excellent old proverb, "Honesty is the best policy." The fattening of cattle is a subject of some importance; but with regard to sheep is thought by many to receive more attention than is useful. The fattening of cattle depends, first, on the form of the animal; secondly, on the disposition or temper; thirdly, on the state of the digestive organs, and on the animal's health, that is, considered both locally and generally, or constitutionally, for a painful local disease will retard fattening; fourthly, on the climate; fifthly, on the quality of the food; and, sixthly, when the animal is kept in or *stall-fed* as it is termed, on the distribution of the food; that is, on its being given in quantities suitable to the digestive power, and allowing proper intervals between each meal. The best form for fattening is a wide deep chest, round open ribs, small limbs, wide loins, deep flank, tail going off nearly in a line with the back. A good disposition or temper, that is, a quietness and cheerfulness of temper, is in some measure heredi-

FATTENING.

tary ; but much depends upon kind treatment. Animals of a naturally bad or vicious temper are made worse by cruel usage, but may be greatly improved by gentleness and kindness. Whether cattle are intended for the dairy or for work, great advantage will be derived from treating them properly and attending to their dispositions. Previous to fattening cattle, they are sometimes kept in work for two or three years. Many are lost during this time by working them too hard, by keeping them on unwholesome food in the winter, and by letting them drink cold water when heated and fatigued by their work, or by tying them up in a cold stall when sweating and fatigued. The poorer or leaner an animal is when put up for fattening, the more care is required. Such an animal should be brought gradually into good pasture, or to the use of rich nourishing food. A little opening medicine and bleeding are often useful when the practice of stall-feeding is adopted. Animals that have been kept on unwholesome food during the winter generally suffer more or less injury in their digestive organs, especially in the stomach. (See *Digestive Organs*.) When such are turned suddenly into good pasture, under an erroneous opinion that nothing but good food is necessary for fattening, some dangerous disorder is often the consequence. They should be first turned into rough land, where they must work for their living. Here the stomach, and other parts subservient to digestion and nutrition, will gradually acquire health and strength, thereby invigorating the constitution generally. Local disorders, such as Low, or Foul in the foot, should always be carefully attended to until cured ; also mange, lice, and other cutaneous affections. Disorders of the mouth or grinding teeth, which may render rumination painful, should likewise be cured previous to putting up beasts to fatten. (See those articles.) Grass is the best food for fattening cattle ; but the consumption of beef is so great, that there is not sufficient pasture for the purpose. The artificial grasses, roots, pulse, and grain, are therefore occasionally made use of. All these are wholesome and nutritious when properly dispensed, as before observed ; but the too generally prevailing notion, that

FAU

good food alone is necessary to the fattening of animals, without any regard to the quantity given, or the state of the organs which are to digest and assimilate it, often converts it into a poison, or rather into a cause of disease. Too much food oppresses the stomach, impairs the digestive function, and destroys or vitiates the appetite. Too much blood oppresses the heart and blood-vessels, and produces inflammation in some vital organ. The disorder first produced by overloading the stomach with food is termed *Blasting* (which see) or gorging, and often proves fatal. Thousands of yearling cattle have been destroyed by feeding them too well, and causing too much blood to be formed. This disease is named *Quarter-ill* or *evil*, and almost always proves fatal in a short time, or before relief can be afforded by bleeding. In fattening calves much injury is often done by giving too much milk at a time, or by giving milk not sufficiently fresh, or that has been taken from a cow with a bad udder. The state of stomach thus produced causes a morbid acidity to take place, which brings on scouring, colic, inflammation of the bowels, or convulsions. All the disorders here alluded to are noticed in their respective places. Instead of fattening horses, the most useful object is to deprive them of fat by exercise, and thereby give tone and energy to the muscular and nervous system. (See *Training*.) There is much room for improvement in the general method of fattening pigs and poultry: for observations upon this branch of rural economy, the reader is referred to vol. iv. of the author's *Farriery*, or *Cattle Medicine*.

FAUCES. That part of the throat which lies behind the tongue.

FAULTS, or DEFECTS. There are few horses perfectly free from faults or defects; and when those who have occasion to purchase a horse seek such a one, they will find it extremely difficult to suit themselves. A fault or defect may imply either an imperfection in a horse's temper, his paces, his health, or his form. There is scarcely a horse that does not start or trip in some degree: we seldom meet with one that has a perfect foot; sometimes we are alarmed at hearing a horse cough; or he may

FEA—FEE

appear tender, at times, in going over stones; or may have a small speck on his eye, or a splent on his leg. These and other faults of a similar kind should not prevent a person from purchasing, if the horse possess the more essential qualities that may be required. When a rider makes up his mind to put up with those minor defects, and perseveres in riding the horse, he will gradually forget the animal's faults, or rather become incapable of distinguishing them; the horse and the rider will meet each other, and harmonize both in temper and action; especially if the proprietor be considerate, and not desirous of working the horse unfairly or beyond his condition. See *Soundness* and *Condition*.

FEATHER. A mark in the horse's forehead or neck, made by the turn of the hair. It is considered ornamental, and, by some, as an indication of good qualities.

FEATHER WEIGHT. Among sportsmen, or on the turf as it is termed, this signifies the lightest weight that can be put upon the back of the horse, in whatever match he may be engaged.

FEBRIFUGE. Medicines that cure fever.

FEEDER. A feeder is an important office in a hunting establishment: he has the management of the kennel, but is subject to the occasional commands of the huntsman. Mr. Taplin, in his *Sporting Dictionary*, observes, that "the feeder should not only be young and alert, but fond of his employment, as well as humane and good-tempered, for the comfort of the animals intrusted to his care, who have not the power to expostulate when ill used, or to remonstrate if their grievances stand in need of redress."

FEEDING. This is a subject of great importance; for on the proper feeding of horses their health and usefulness greatly depend. Hay is the principal food of the horses of this country: it consists of various herbs; and this variety in the natural meadow-grass, where the soil is good, and the grass is cut while in flower, and well saved, renders it preferable to what is termed the sown or rye-grass hay. Good hay is more relished by horses than any other dry food, and when given with moderation, is more wholesome; but bad or indifferent

FEEDING.

hay, especially when a horse eats a great deal of it, is exceedingly injurious. Good meadow-hay is of a light-green colour, of an agreeable and rather fragrant smell, has a variety of herbage in it, and feels rather crisp from being well dried. Such hay can always be purchased in populous districts or near large towns, and will be found cheaper than indifferent or bad hay, though it cost four times as much. Good rye-grass and clover-hay agree well with horses when given with moderation. Mow-burnt hay is often eaten with avidity; but it causes thirst, and is not easy of digestion. When there is a necessity for using it, it may be previously sprinkled with salt and water: a small quantity only should be given, and the deficiency supplied with a little good straw and an additional feed of oats. Horses that work hard should be allowed a small proportion of ground beans with each feed of oats. The daily allowance of hay for a saddle-horse should not exceed twelve pounds; many hunters are allowed only eight pounds, and are kept in the highest condition. Horses that work regularly have not sufficient time to load themselves with hay, like those whose work is irregular, or such as have but little to do. When young horses are kept in the stable a great deal, with hay constantly before them, they will eat merely because they have nothing to do; and by being kept in this way for some time, they, in process of time, stretch their stomachs to double the natural size, and thereby increase the appetite both for food and water. It is in this manner that horses gradually acquire that inordinate craving appetite which we so commonly observe among them. When such horses are fed, if the oats are thrown all together in a heap in the manger, they grasp so eagerly at them, and take so many into their mouths at once, that they cannot masticate them all, but swallow a considerable portion of them unchewed. These, being indigestible, pass through the bowels unchanged; many are seen whole in the dung. Horses should be fed three or four times a day. Early in the morning they should have a little hay and about a gallon of water: having eaten this, they should be exercised for an hour or two, if they have no work to do; and when they return, the

FEEDING.

first feed of oats should be given. About twelve o'clock another portion of hay should be given, a small feed of oats, and another gallon of water: at six in the evening, a little walking exercise, and afterwards a feed of oats. A small quantity of water may be given while at exercise. At eight, the last portion of hay should be given, and a little water. If a horse be wanted for work the following day, another feed of oats may be allowed. When a horse has no work, and it is not convenient to give him sufficient exercise, a cold bran mash should be substituted for one of his feeds of oats. This is a good method of feeding a horse that has but moderate work, and that work uncertain. Travelling from ten to twenty miles a day, at five or six miles an hour, may be called moderate work. When a horse is ridden or driven faster than this, he should be kept without food for an hour or two before he is taken out; and when this has been omitted, he should be ridden slowly for the first three or four miles. A mixture of oats and bran, or ground oats and good fresh bran, made into a cold mash, is excellent food for a horse that has but little work to do; it prevents thirst, and is easy of digestion, and on this account is particularly useful for horses that are eager for water. Such horses should have their hay dipped in water also, and none but the very best should ever be given to them. Many horses will eat their litter, when kept to a proper allowance of hay: such horses should be muzzled after they have eaten their night's allowance, and during the day the litter should be taken away. I have observed, in some hunting stables, even when they have no work, and before the hunting season begins, that the horses are constantly well littered, and never disturbed except at the regular stable-time. This I observed in Colonel Berkely's stable, which is kept in the best style. The head groom informed me that he gave only seven or eight pounds of hay a day, and five quarterns of oats: both the hay and the oats were of the very best kind. In another gentleman's stable, of the same place (Berkely), I desired the groom to weigh the quantity of hay he usually gave daily, and it was only seven pounds and a half. Many persons, no doubt, will be astonished

FEEDING.

at hearing that a horse can live on so small a quantity of food; nor is it likely that he could do so without suffering a great deal, if he had been accustomed to eat three times that quantity, which many horses are in the constant habit of doing. The best method of reducing the capacity of such overstretched stomachs, is to turn the horse to grass for a considerable time: if it is attempted in the stable, it must be done gradually and carefully. In the spring, and early part of summer, horses should be turned to grass, or allowed some green food, such as vetches or lucerne, in the stable; and if they are kept loose in a large airy box, or in a paddock or court where they can have shelter from the sun and rain, it will be of great use to them. Barley, after being steeped in water for twenty hours, has been recommended, mixed with chopped straw, as food for horses. This mode of feeding has been practised with great success for about three years, by Mr. Rogers, post-master, of Southampton. Raw potatoes and beans have been given to a team of coach-horses for several years with the best effect; and Mr. Curwen, the great agriculturist, has, for many years, kept his horses and cattle on swedish turnips, potatoes, and chopped straw and hay, all cooked by steam. A full account of this mode of feeding may be seen in the *Farmer's Magazine*. In India, strong soups, sheeps' hanges, or other animal food, boiled down to rags, thickened with meal, and seasoned well with spice, are commonly given as extra nourishment, or as a restorative to horses; and in Iceland, horses very commonly eat fish. I have known a butcher's mare that was kept loose in a place where sheeps' hanges were usually hung up: she gradually acquired a habit of eating them, and will do so now with pleasure. On the other hand, we sometimes see horses living on vegetable food which one would suppose to be quite destitute of nutriment; such as decayed musty hay, straw, or pea and bean stalks. All this shows what wonderful power there is in the stomach to adapt itself to all kinds of food. This power, however, is limited, especially in horses that are obliged to work; for though they may exist for a time on such food, they

FEEL.

cannot labour on it. Cattle, especially young stock, very commonly live, during the winter, on bad hay and straw, which does not appear to contain any of that saccharine and mucilaginous matter which is found in good hay; but when spring comes they are turned to grass, and that proves an effectual restorative. Many, however, become diseased, and die in consequence of the change; especially those that are most impoverished by such feeding. From all the foregoing circumstances, I think we may infer, that though a horse may live, and appear to thrive, on a great variety of food, good hay and good oats are the best diet. It may be said, that some horses will do well with much less food than others, and that, on this account, no invariable standard for feeding horses can be established: this objection, however, is more specious than solid, and will not be found, in practice, to affect the general directions here offered. Should any individual horse appear to require any peculiar management in regard to feeding, the quantity of food most fit for him may soon be ascertained. The most important circumstances with respect to feeding, are to prevent young horses, when first taken into the stable, from acquiring an inordinate appetite, by giving no more food than is proper; and if no useful employment can be found for them, and such as is suitable to their age and strength, to turn them into a field where they may exercise their limbs and invigorate their muscular system. This is much better than leaving them in the stable idle, with hay or straw before them, where they will continue eating merely for employment, and gradually acquire a morbid and vitiated appetite, which it is difficult to correct. When a horse whose habits are already formed is purchased, the groom will soon find out what they are; and if the animal has already acquired an immoderate appetite, it must be gradually corrected. I have just seen an old stallion (*Bagatelle*), twenty-four years old, that eats only half a peck of oats a day, and six or seven pounds of hay, and is really looking very fresh and in good condition. See *Food*.

FEEL. A term in the manège or riding-school. To feel a horse in the hand, is to feel or observe that the

FEL—FEV

will of the horse is in the rider's hand, that he takes or obeys the direction given by the bridle, or has a good bearing upon the bit. To feel a horse upon his haunches, is to observe that he plies or bends them, which is contrary to leaning or throwing upon the shoulders.

FELON. A term given by Clater and some others to epidemic colds or influenza of cattle. (See *Catarrh*.) When attended with rheumatic swelling of the joints; it is termed *joint felon*.

FEMORAL ARTERY. The principal artery of the thigh.

FEMUR, or Os FEMORIS. The thigh bone.

FENNEL-SEEDS, SWEET. These are sometimes used as a cordial and carminative, but are not so efficacious as anise-seeds or caraway-seeds. The dose, one or two ounces, with ginger.

FERN. The root of the male fern was formerly considered a remedy for worms, especially the tape worm. It was employed as a secret medicine by a Madame Nuffer or Neufier, and purchased of her and made public by the French government. Bourgelat prescribes it as a vermifuge, or anthelmintic, in his *Matière Médicale Raisonnée*: the dose, six drams in the morning fasting, and the following morning a mercurial purgative.

FETLOCK. A lock of hair at the lower part of the fore and hind legs. It is not only ornamental, but serves to defend the heel from stones, &c. Much mischief is done by trimming out the heels of horses. See *Trimming*, vol. iii. of *White's Farriery*, p. 190.

FETLOCK JOINT. This is an important joint, and is one of the principal springs on which the horse is supported. On this account it is very liable to injury, especially in horses whose pasterns are unusually long, and slanting or oblique in their position. Such horses, however, are remarkably pleasant to ride, and for easy work, with a light weight, are rather desirable. In draught-horses, this kind of pastern is very objectionable. (See *Pastern*.) In injuries or strains of the fetlock joint, rest is an essential remedy. See *Strains*, and vol. iii. of *White's Farriery*.

FEVER. Though horses and other domestic animals

FEVER.

are liable to fever, there is not that variety in the disease, nor is it by any means so intricate as it is in the human subject. Some practitioners do not admit the existence of fever in the horse as a primary disorder, but consider it as symptomatic, or dependent either on general or internal inflammation. I am of opinion, however, that fever sometimes occurs unaccompanied by internal inflammation; but the latter is always attended with fever. Mr. Blaine has considered all the febrile affections of the horse under three heads; the common or simple fever, the symptomatic fever, and the malignant epidemic fever. This division of febrile diseases is, I think, applicable to cattle as well as horses. The fevers of horses (for it is of little importance whether we call them fevers or inflammation) are generally connected with inflammation either of the mucous or serous membranes, or both: in other words, fever may be of the catarrhal kind, as in the epidemic catarrh, or the violent catarrhs or colds which sometimes prevail in the spring or beginning of summer, attended with sore throat, great difficulty of swallowing, running at the nostrils, heaviness, and weakness. Fever may affect the mucous surface of the stomach and bowels, when it causes great languor and debility, and yellowness of the eyes and mouth. The dung is in small hard knobs, generally covered with mucus or slime; the appetite is destroyed, and the eyes are watery. In this case it is probable, from the yellowness of the eyes and mouth, that the liver is affected. (For the treatment of catarrhal fever, see *Catarrh*.) Fever connected with inflammation of the mucous membrane of the stomach and bowels requires bleeding and a mild purgative. The following is as effectual as any, especially when aided by clysters of salt and water with a little sweet oil:

Take, of Barbadoes aloës, three drams.

Carbonate of potash, two drams.

Water, eight ounces.

Castor oil, or sweet oil, eight ounces.

Oil of cloves, ten drops.—Mix for one drench.

If a ball is preferred,

Take, of Barbadoes aloës, five drams.

Castile soap, three or four drams.

FEVER.

Oil of cloves, ten drops.

Syrup, enough to form the ball.

Bran mashes are the best food for the horse; and if it be in summer, a little grass or vetches may be given. I have known botts in the stomach occasion severe and fatal fever. Several cases of this kind occurred to some young troop-horses of the Royal Dragoons in the early part of the spring of 1800. Many of them died; and on examining the stomach there were such injuries discovered from botts, as clearly proved that they were the cause of the disorder. In all of them, however, there was the highest degree of inflammation of the lungs, pericardium, surface of the diaphragm, and internal surface of the ribs. There was a considerable quantity of water or serum, mixed with flakes of coagulable lymph, with which the lungs and pericardium were thickly coated. The heart also was inflamed. Large sloughing ulcers were found in the stomach, which, in one or two instances, had penetrated quite through. (See *Botts*.) The symptoms of this fever were such as indicated inflammation of the lungs, but attended with great weakness, and an appearance of considerable depression of spirits. In one horse that appeared to suffer very acute pain, some opium was given, by which it appeared aggravated: he then had a pint of castor oil, which relieved him. This horse gradually recovered, and I believe he was the only one that got over the attack. (See *Lungs, Inflammation of*.) Fever is sometimes of a very acute kind, such as that which occurs when a horse is taken from grass, and put suddenly into a warm stable and fed with corn. This fever is generally connected with inflammation of the serous membrane of the lungs, named *pleura*, and has therefore been named *Pleurisy*. In this fever the pulse is frequent, the animal breathes quickly, which is seen by the motion of the flanks and nostrils: there is also costiveness and high-coloured urine. The ears and hind legs are sometimes cold. There is no appetite. Sometimes the horse appears to be griped, lies down and suddenly rises again; is often trying to stale, and voids only a small quantity of high-coloured urine, and that with pain and difficulty. In this case, the serous membrane of the bowels, named *peritoneum*, is inflamed, and

FEVER.

the danger to be apprehended is in proportion to the violence of the pain.—The treatment of both these fevers is nearly the same. Bleed, as early as possible, until the horse become faint, and repeat the operation as often as it may appear necessary. One copious bleeding will often subdue the fever, provided it be performed sufficiently soon; but if the horse does not get better a few hours after the operation, and especially if the blood first drawn has a thick coat of buff or size on its surface, (see *Blood and Bleeding*) the pulse continuing quick, and the membrane under the eye appearing very red, bleed again as freely as at first, or until the horse be faint. A laxative drench of Glauber's salt and castor oil may be given (unless the bowels are already sufficiently open), and its operation assisted by a clyster. When an opening drench is found unnecessary, or if any medicine be required after its operation, a little nitre, or nitre and antimonial powder, may be given. After the inflammatory symptoms have been completely subdued, a little gruel or malt may be allowed. When in this kind of fever the horse loses a moderate quantity of blood, and the bleeding is repeated now and then, an effusion of water often takes place into the cavity of the chest, which generally alleviates the complaint for a time, and often excites delusive hopes of a recovery. Moderate bleeding, therefore, should never be trusted to, though repeated ever so often. When a horse with this kind of fever, instead of being bled, has cordials given him, the disease quickly proceeds to a fatal termination; and this is as good, if not a better practice, than that which protracts the disorder, or changes it from inflammation of the lungs to dropsy of the chest, which always ends fatally. (See *Dropsy*.) A very dangerous and often fatal kind of fever is produced by over-exertion, and especially by riding a horse a journey when he is unwell, weak, and consequently not fit for work. In this case there is great depression of the nervous system, and a considerable determination of blood to the brain, which is seen by the redness of the inner surface of the eyelids, heaviness or stupor, and great debility. There is also quickness of breathing and quick pulse, denoting inflammation of the lungs. Such cases can only be re-

FEVER.

lieved by early and copious bleeding and opening medicine, with clysters. If the muscles of the loins are much affected, they should be covered with a sheep's skin, or blistered. Sometimes the fever appears to affect the feet also; and sometimes it seems to be transferred to the feet, or, as it is commonly termed, falls into the feet. The spinal marrow is often inflamed, I believe, when there is a stiffness in the loins and hind legs; and when there is a general stiffness of the muscles, I think the cerebellum, as well as the spinal marrow, is affected. There is a canal in the spinal marrow of the horse, in which I have found a yellowish pulpy matter in cases of over-exertion; and in one case, where a horse (a colt three years old) died of inflammation of the lungs and bowels, which took place while at grass, in the beginning of winter, in a low open situation, there was a collection of water within the sheath of the spinal marrow; and a considerable decay of the marrow itself. I have seen a case where the spinal marrow was so affected that the horse could scarcely bear to be moved. The pain was at times so acute upon moving, that his hind parts would suddenly give way, and he would fall down. The urine was discharged by a great effort of the abdominal muscles; paralysis of the bladder soon took place; and there being no prospect of the horse's recovery, he was destroyed. Here the yellowish pulpy matter was found in the spinal canal; the spinal marrow was inflamed, and the whole of the bladder paralysed; that is, it appeared flaccid, empty, and of a very unhealthy colour. One of the kidneys was a little inflamed. There is nothing, I believe, but early and copious bleeding, that can cure this disorder, though so much debility is generally present; and we sometimes find, that after taking off blood until the animal becomes faint and reels, the redness of the under surface of the eyelids still continues. This may be considered as an unfavourable symptom, especially if the quickness of breathing do not abate. According to Mr. Blaine, "If the horse, instead of becoming lively and showing symptoms of recovery, appears dull and heavy, starting sometimes and dozing at others, with a weak quick pulse, liquid stools, and profuse staling, great danger is present, and the treatment must be very active

FEVER.

to prevent a fatal termination." For this he directs to be given, every four hours, powdered ipecacuanha, camphor, and opium, of each one dram, either as a drink or formed into a ball. Should not amendment follow speedily on this, that is, if the watching and stupidity increase—for sometimes one, and at other times the other, of these symptoms are present—and if the pulse becomes weaker, the following is to be given :

Carbonate of ammonia, half an ounce.

Vinegar, sufficient to make it taste neither salt nor sour.

Snake-root, in powder, two drams.

Camphor and opium, of each two drams.—Mix with gruel, and give it every four or six hours.

I never saw such a case as Mr. Blaine has here described ; and if it does occur, am inclined to doubt the propriety of the treatment he has recommended ; particularly in giving *two drams* of opium and *two* of camphor at one dose, and repeating it every four or six hours, and in drenching the horse frequently with strong ale or wine mixed with gruel. When the feet are much inflamed, the horse should be bled in the toes, and the feet kept constantly moist. (See vol. iii. of *White's Farriery*.) Fever in the horse is sometimes preceded by shivering and loss of appetite, and is sometimes completely relieved by a violent inflammation taking place in one of the hind legs. In this case, the horse should be bled in the toe of the affected leg to the extent of six or seven quarts, or more if necessary. Unless this be done, and the leg be well fomented afterwards, a permanent and considerable swelling of the leg is generally the consequence. I have seen a dose of physic prove fatal in such cases, but the bowels may be opened with clysters and mashes : some cooling diuretic, such as nitre, may likewise be administered in the dose of half an ounce twice a day. Fevers of this kind, as well as those from over-exertion, are commonly named *chills* ; whether the horse be suddenly cooled by immersion in water or standing in the cold or rain while sweating, or taken into the stable and well looked after as soon as he comes off his journey. This name, *chill*, has led to the dangerous practice of giving a strong cordial as soon as the horse is perceived to be ill. When a horse is

FEVER.

exhausted in the chase, as is the case sometimes in fox-hunting, the heart and lungs are gorged with blood, and unless relieved by copious bleeding they seldom recover. I have examined horses that died in this way, and have always found the lungs crammed with blood, and the heart inflamed. I have also seen a distressing inflammation of the kidneys thus produced. The poor animal was almost constantly making painful efforts to stale, and voiding only a very small quantity of high-coloured, or rather dark, bloody urine. There is another kind of fever, which, fortunately, has not happened in this country for a great many years, but has at different periods swept off an immense number of animals in various parts of the continent. This is the putrid, malignant, or pestilential fever. It does not appear to have visited Europe since the year 1744. According to M. Sauvage, the celebrated professor of medicine at Montpellier (who paid great attention to the subject at a time when it raged with extreme violence in many parts of Europe), out of twenty that were attacked by this fever, nineteen died. No remedy nor effectual mode of prevention had been discovered, and the only chance of escape was to separate the healthy from the sick. In 1713 and 1714 a dreadful pestilence prevailed in the ecclesiastical estates. According to Lencisi, there died, between October, 1713, and April, 1714, in all, 26,252 head of cattle. This writer thinks, that if the account had begun from the 2d of August, the number of cattle that perished would have amounted to 30,000! It is a mercy we cannot be sufficiently grateful for, that such dreadful epizootic disorders have not occurred in the present age. But epizootic diseases of a far less formidable nature have happened at different periods in this country, and have been confined in great measure to horses. Osmer and Gibson, two very respectable authors, have described contagious fevers that prevailed among horses in their time, and I myself witnessed one in the summer of 1798, and another in the spring of 1815. Both the above-mentioned authors, and especially Gibson, found early and plentiful blood-letting the essential remedy: Osmer, however, depended also on rowels. The result of my own practice is decidedly in favour of early and copious bleed-

FIB—FIL

ing ; and I have experienced the best effect from repeating the operation at any period of the disorder, should an increase of the symptoms, or any change in the animal, appear to render it necessary. Much harm is often done in these complaints by cramming the horses with gruel, or giving corn privately; and this is the cause, I believe, of the inflammatory symptoms, or fever, rising unexpectedly, or at a time when the medical attendant considered the horse in a state of convalescence. Whenever this is observed, the horse should be bled freely immediately, and afterwards confined in great measure to a bran diet. I think a handful of hay now and then, after the soreness of the throat has subsided, does good, by exercising the salivary glands. A little nitre is as good a medicine as can be given, or a little nitre and antimonial powder, such as,

Nitre, four to six drams.

Antimonial powder, one to two drams.

Mix, and put it in the mash, or make it into a ball with flour and treacle.

FIBULA. The small bone of the human leg is thus named. In the horse's leg, or thigh as it is commonly named, that is, from the stifle to the hock, there is only a very small bone attached to the principal bone, which is not at all concerned in the motion of the limb, as in man. It appears to be of no particular use, and is rather less than one of the small splent bones. See *Description of the Frontispiece*.

FIG. This name is applied to an excrescence on the sensible frog in consequence of a bruise. Pare away the surrounding horn, and touch the excrescence with lunar caustic or butter of antimony; then bind on a pledget of tow or lint dipped in tar, so as to keep a constant pressure on the part.

FIGGING. Putting a bit of chewed ginger into the horse's fundament, to make him carry his tail high; a foolish practice among horse-dealers.

FILLY. A name given to a mare until she be two or three years old.

FILM. Opacity of the cornea or surface of the eye is thus named. See *Eye*.

FILTRATION. Straining liquids through unsized

FIR—FIS

paper, such as blotting paper; also through sand or a porous stone.

FIRING. A severe operation, often performed on horses for old strains, spavins, curbs, ringbones, &c. —It consists in drawing lines in various directions on the affected part with a red-hot iron. In the first volume of the *Veterinary Medicine*, the reader may find a minute description of this operation, and a plate representing the instruments that are employed, and the method of throwing down and securing the horse. It may be laid down as a general rule, that no part is in a fit state either to be fired or blistered when the skin is hot and inflamed, and that the skin should never be penetrated with the iron. I have fired many hundreds of horses, and have seen much benefit result from the operation: it unfortunately happens, however, that it is too often performed in cases that are absolutely incurable, and it is sometimes impossible to ascertain whether it will be effectual or not. Immediately after a horse has been fired, a mild blister should be applied to the part. The first night the horse should be tied up short, to prevent his biting or rubbing the part. The following day he may be turned loose into a box, or other place where he can move himself about; and, to prevent his rubbing the part, a necklace or cradle should be placed round his neck. In about a week the fired part will become dry: some oil should then be applied, and the horse turned to grass. When any heat or inflammation is perceived in a part that requires firing, it is advisable to defer the operation a few days, and in the mean time bathe or sponge the part frequently with cold saturnine lotion. This is made by mixing two ounces of acetate of lead with a pint of vinegar and a gallon of water.

FISTULA OF THE WITHERS. An obstinate disease of the horse's withers or top of the shoulder, commonly produced by a bruise from the saddle. When a horse is ridden with the fore part of the saddle constantly bearing on the withers, inflammation and swelling will generally be the consequence. A considerate person will not suffer this accident to happen: he will examine the saddle before he gets on horseback, and if he finds

FISTULA OF THE WITHERS.

it too close upon the withers, will cause it to be altered. Should the saddle get forward during the journey, and press upon the withers, the experienced or feeling rider will soon discover the inconvenience and pain the animal suffers from it, (which is sometimes so considerable as to cause him to fall;) and as soon as he gets to the end of his ride, will have the part frequently bathed with some Goulard's extract, vinegar and water, or the cold saturnine lotion, the formula for which is given in the preceding article. This will soon remove the inflammation; and when the saddle has been properly altered, the horse may again be ridden without inconvenience. It too often happens, however, that the rider is not so considerate; but by a repetition of the injury violent inflammation ensues, which often extends to the bones and ligaments of the withers. The swelling increases; suppuration follows; and when the abscess bursts, or is opened, a large quantity of matter is discharged. On introducing a probe, the disease will generally be found to have spread either towards the mane or the back, or downwards, in the direction of the shoulder blade. If the disease, after this, is neglected, or improperly treated, the matter will continue to penetrate, and the cartilages and bones of the withers will ultimately become carious or rotten. It is in this stage of the disease that the horse is often brought to the veterinary surgeon. When tenderness and swelling are observed on the withers, the part should be frequently bathed with the goulard mixture, or cold saturnine lotion before mentioned; but if this do not remove the inflammation, and if the swelling appear to increase, suppuration may be expected, which should then be promoted by poultices. When the abscess has become soft, and the suppurative process appears to be complete (see *Abscess*), an opening should be made in it with a lancet; and as soon as the matter is discharged, a probe is to be introduced, in order to ascertain how far and in what direction the disease has extended. If the matter has penetrated, and formed sinuses, they should be completely laid open with the knife;

L

FISTULA OF THE WITHERS.

and the most convenient instrument for the purpose is the straight probe-pointed bistoury. If the matter is found to have penetrated downwards in the direction of the shoulder, a seton may be passed through the sinus, from the opening above to its lowest part; taking care that the lower opening be sufficiently large to allow the matter to run off freely. The first dressings should consist of some mild caustic or rather escharotic preparation; but in obstinate cases of long standing, the stronger caustics are often found necessary. In this first stage of the complaint, perhaps the ointment of nitrated quicksilver mixed with oil of turpentine, or a strong solution of blue vitriol with the addition of a little muriatic acid, will be found to answer the purpose. When the sore begins to assume a healthy appearance, milder applications are proper. In the more inveterate cases of fistula, butter of antimony will be found an active and useful preparation; and in such cases a preparation termed the *scalding mixture* by farriers has proved beneficial. It consists of any fixed oil (as lamp oil or train oil), spirit of turpentine, verdigris, and sublimate. These are put into an iron ladle, and made nearly boiling hot; and in this state the mixture is to be applied to the diseased parts by means of a little tow fastened to the end of a probe or stick. It is necessary to prevent the mixture from flowing over the sound parts, as it would not only take off the hair, but cause inflammation and ulceration of the skin. This precaution should be observed with regard to any caustic preparation that may be used, as well as to the acrimonious matter which the fistula discharges. I have generally succeeded in protecting the parts over which the matter flows, by washing them once a day, and smearing them over with lard. One circumstance it is very necessary to attend to in the treatment of fistula: that is, if there be any cavity, pouch, or sinus, by which the matter may be detained, the obstacle should be immediately removed; either by laying it completely open, or by making an opening in the most depending or lowest part, so as to allow the matter to run off freely.

FIX—FLA

We sometimes find the edges and sides of the fistulous sore considerably thickened ; and if we examine this substance, it will be found a diseased mass. I have, in many instances, in pollevil as well as in fistula, cut out a large quantity of this thickened matter, and have always found considerable advantage from it. When the bones of the withers are exposed and feel rough, they should be scraped with a drawing knife or other convenient instrument, and then covered with a pledget of tow or lint that has been dipped in tincture of myrrh. See *Caustics* and *Escharotics*.

FIX FAX. The cervical ligament, or great ligament of the neck, extending from the poll to the withers. See *Ligaments*.

FLATULENT COLIC. See *Colic*.

FLATULENCY. Wind or air in the stomach and bowels. Crib-biters, broken-winded horses, and horses that eat a great deal of hay and drink much water, are always more or less flatulent. It depends upon the bowels having been stretched and weakened by the quantity of food and excrement passing through or collected in them. Flatulency of the stomach from indigestion is of a serious nature, causing great pain or colic, commonly named Gripes or Fret. This disorder is sometimes slight, and passes off by moving the horse about a little. Sometimes it is more considerable, and requires some warm stimulating drink, such as hot gin and water, or brandy and water : if these be not at hand, warm beer, with ginger or other spice, may be substituted. The most certain remedy is the anodyne carminative tincture ; the dose, two or three ounces, in warm water. (See *Colic*.) In obstinate cases, four ounces of oil of turpentine may be given, mixed with water. Clysters of salt and water should never be omitted, as there is generally a good deal of excrement in the bowels. (See *Clysters*.) Horses that are habitually flatulent, and especially if they are greedy in feeding and drinking, should be limited in hay and water ; and if they eat their litter, should be effectually muzzled the last thing at night, and have all their litter taken away during the day. See *Appetite*.

FLE—FOM

FLEAM. The instrument with which horses and cattle are bled. See *Bleeding*.

FLESH. A common name for the muscles of the body.

FLEXOR. The flexor muscles are those which bend one bone upon another. The muscles which bend the leg, for example, are named flexors. See *Muscle*.

FLIES. Horses that have sores, and all horses kept at grass in summer, are dreadfully teased by flies. A mixture of train oil and tar will keep them off as well as any thing.

FLOWERS. A term applied to the finer parts of bodies which are separated by sublimation; as the flowers of benzoin, sulphur, zinc, &c.

FLUX, or BLOODY FLUX. See *Dysentery*.

FOAL. A name given to the young horse until he is one year old.

FOALING. The bringing forth young in mares is not so often attended with difficulty as in cows, and they have seldom occasion for assistance. They should be placed in a situation where they may have shelter, and where there are no deep ditches. See *Abortion*.

FÆNUGREEK-SEEDS. These seeds contain a good deal of mucilage, and have, therefore, been employed in emollient drinks and clysters: also in emollient fomentations and poultices. Gibson recommends them in consumptive diseases, or for horses that are inclined to be broken-winded. They are seldom employed in modern practice.

FOMENTATION. Fomentations are generally made by boiling chamomile flowers, wormwood, featherfew, southernwood, bay-leaves, and other herbs in water. For emollient fomentations, marsh-mallows are generally preferred. It is probable, however, that warm water is as good a fomentation as can be employed. The temperature or heat of the water should be such as not to give pain, but rather a comfortable feeling. The scalding-hot fomentation is useful only when a deep-seated part is to be relieved. In inflammation of the bowels, for example, a large bag of flannel, wrung out of very hot water, is applied to the belly by two men, one standing on each side the horse. In inflammation of the skin, the water should be only at blood heat; and in inflammation of the eye, a little cooler. Decoction of

FOOD.

white poppy heads, hemlock, and other narcotic vegetables, are supposed to be more effectual in relieving local pain than warm water: however, this idea is probably without foundation. There is no other objection, however, to their use, than the trouble and expense of preparing them.

Food. The best food for a working horse is oats and hay, provided they are good. If horses work hard, some bruised or split beans may be added; but they certainly are not necessary, if the oats and hay are *really* good. Beans are more difficult of digestion than oats, not so easily masticated, and are often mixed with stones, especially the small tick-beans, which injure the teeth, and probably the stomach. (See *Mastication*.) To obtain good hay, the grass should be of a good kind, and consisting of various sorts, or, as it is commonly termed, full of herbage. The soil should be favourable and well drained. The grass should be mowed early and while in flower, and should afterwards be almost constantly attended to, if the weather be at all favourable. The more it is thrown about, the better will it be made, and the more effectually will its fragrance and other good qualities be preserved. This is not, any more than early cutting, considered an economical method. The quantity is generally looked to more than the quality; but bad hay is dear at any price, while good hay is always cheap. Most horse-keepers give twice as much hay as is necessary. Barley that has been steeped in water from twelve to twenty hours is excellent food for horses.

Ground barley and bran also make a good feed for horses. When any kind of grain gets into the stomach unbroken (which is often the case with horses that feed greedily, or with those whose grinding teeth have sharp or keen outside edges, which wound the cheek in chewing), it is very difficult of digestion, and is apt to swell in the stomach, and do a great deal of mischief. Should the horse experience no inconvenience from it, great part of the unbroken grain, perhaps the whole, passes through the stomach and bowels without affording any nutriment, and is often found in the dung in considerable quantity. Unbroken barley is more difficult of digestion

FOOD.

than unbroken oats; and unbroken pease or beans still more so than barley. Fatal attacks of colic have often been produced by swallowing them in this state.

Much has been written on the advantage of bruising oats for horses, and it has been proved by comparative trials, that a great saving may be thus effected. Some care, however, is necessary in adopting this practice. The oats when bruised soon become musty, if kept in a damp place. A peck of oats, when bruised, will fill five quarters or more. Horses seldom relish bruised oats at first, especially when they are given unmixed with cut hay or straw. Cut clover hay is perhaps the best kind of chaff, or a mixture of clover and rye-grass.

Clover hay is frequently made too late: after its stalks have become tough and woody, it is often imperfectly dried or overdried in the mow, and dusty. When hay is very dear, a great saving may be made by what is called manger-feeding; that is, giving all the allowance of hay in the form of chaff, and mixed with oats, either bruised or unbruised. The latter may do well with chaff, as they are in that case sure of being masticated. When this mode of feeding is adopted, the manger should be deeper and wider than it usually is, or the horse will sometimes throw his food out of it with his nose. I have thought that a good deal of corn might be saved by fastening a horse's head while feeding, in such a way that he cannot look round, or drop any of his oats, while chewing them, out of the manger upon the litter. With regard to manger-feeding, it may be observed, that horses appear to feel a pleasure in eating their hay from the rack gradually; though some are so mischievous as to pull great part of their hay out of the rack before they begin to feed, by which a great deal is trodden upon and wasted. For such horses the rack and manger described in the first vol. of my work on *Farriery*, and illustrated by a plate, is well adapted. This objection to manger-feeding, however, may be obviated by putting a little good straw in the rack now and then; for good straw is generally considered more wholesome for horses than bad or even indifferent hay. It has been before observed, that horses should be limited in hay, and be allowed only a moderate quantity, that

FOOT.

is, from eight to twelve pounds daily for a saddle-horse. When horses are greedy of hay, and eat even their litter, one way of restraining them is to keep them short of water : if this will not do, they should be muzzled, and have their daily allowance of hay weighed. Horses that are allowed to drink freely always eat, or have an inclination to eat, a good deal of hay. A moderate quantity of carrots is good food for horses ; and in spring or summer they derive great benefit from soiling with vetches or lucerne.

With respect to the feeding of cattle, there is certainly much room for improvement. Milch cows, during winter, instead of being fed with bad hay, as they generally are, should have the very best ; and if such cannot be obtained, they should have but a moderate quantity of hay, and the deficiency should be made up by bran mash, with a little malt or oatmeal in them. Bad hay is rendered more easy of digestion, if dipped in a bucket of water in which some salt has been dissolved. Though cows often suffer from being kept on food that is difficult of digestion and deficient in nutriment, they are also injured sometimes, and even destroyed, by excess in feeding. When fed on mangle-wurzel, for example, cows have sometimes been attacked by palsy of the hind parts, vertigo, staggers, and dangerous inflammatory disorders, from eating too much. When cattle are first turned into pasture in the spring or early part of summer, they are apt to form blood too fast, from the pasture being too good and too tempting for them : hence arise red water, blasting, and other diseases. If young cattle, especially yearlings, be kept in good pasture, they often die of the disorder named Quarter-evil. Yearlings, or two-year old colts, sometimes get an inflammatory disorder and dropsy from the same cause, which ends fatally. It may be fairly stated, I think, that one-third of the diseases of horses arises from improper feeding, and the other two-thirds from immoderate work. See *Feeding*.

Foot, or Hoof. To a person totally unacquainted with the structure of the horse's foot, it may appear as a mass of horny insensible matter ; particularly when

FOOT.

he sees a farrier cutting off large slices of it with his butteris, and nailing to it plates of iron. It will be found, however, to be a very complicated piece of animal mechanism, but admirably calculated for sustaining the immense pressure and concussion to which it is almost constantly exposed. The horse's foot may be considered under two heads—the sensitive and the horny parts. The former consist of bones, ligaments, cartilages, membranes, &c., each possessed of numerous blood-vessels and nerves, and is, therefore, susceptible of inflammation and pain. The horny part, on the contrary, is void of sensibility, and serves principally as a defence to the sensitive parts which it covers: it is endued, however, with considerable elasticity, which enables it to yield, in some degree, to the impulse of the internal or sensitive foot in the various motions of the animal. From this view of the subject, it will be obvious, that if, by any means, a disposition or tendency to contract or shrink be induced in the horny covering or hoof, the internal sensitive foot will be more or less compressed; and if the horny matter lose its elasticity, the sensitive foot must suffer from concussion. So wisely, however, is every part of the foot contrived, that when it is properly managed by the groom, judiciously pared and shod by the smith, and when the horse is employed only by a humane and considerate master, it may generally be preserved in a sound state, perhaps, as long as other parts of the body. I am aware that a different opinion is held by some eminent veterinarians, particularly by Mr. Bracey Clarke, who considers contraction of the hoof, and a gradual loss of elasticity, as unavoidable consequences of shoeing. I conceive, however, that if one old horse can be produced, say from twelve to twenty years old or more, whose feet are sufficiently sound to enable him to continue his labour without inconvenience, the truth of Mr. Clarke's position will at least appear doubtful. It must be admitted that old horses, like old men, have not that ease and freedom of motion which they possessed in their youth; and that their feet, like all other parts of the body, are subject to disease from various causes, even in a state of nature

FOOT.

I have seen several colts with diseased frogs and contracted hoofs that had never been shod; and many old horses, from twelve to twenty years old, that have continued sound and serviceable. (See *Shoeing*, and *Hoof, Contracted*.) I now proceed to a brief description of the different parts which constitute the horse's foot, including in that description the pastern, canon, and sesamoid bones.

1. The *Coffin Bone*, which somewhat resembles the hoof in shape, is remarkable for containing the two principal arteries which supply the foot: they enter the lower and back part of the bone immediately under and behind the termination of the flexor tendon. The arteries give off several branches within the coffin bone, which pass out through orifices at its lower and front part, to be distributed over its surface. The coffin bone is connected with the coronary or small pastern bone, and with the *Navicula* or Nut bone. Its anterior and lateral surface is covered by numerous blood-vessels, and the sensitive laminæ or elastic membranes. The under surface has also several blood-vessels: great part of it is covered by the sensitive sole, and at the posterior part the flexor tendon is inserted or fixed.

2. The *Nut Bone* is in shape not much unlike a weaver's shuttle. It is interposed between the flexor tendon and the other bones, to remove the insertion of the tendon further from the centre of motion; having a polished surface constantly moistened by a slippery fluid resembling joint oil, over which the tendon passes immediately before its insertion into the coffin bone.

3. The *Coronary* or *Small Pastern Bone* rests both on the coffin bone and the nut bone, to which it is firmly united by ligaments.

4. The *Great Pastern Bone* rests on the coronary bone, strongly attached to it by ligaments.

5. The two *Sesamoid Bones* are placed at the upper and posterior part of the great pastern, to which they have a strong ligamentous attachment.

6. The *Canon* or *Shank Bone* rests both on the great pastern and the sesamoid bones. It articulates with, and moves easily upon, them. If we view the fore leg

FOOT.

of a horse (particularly when the other is held up, that more weight may be sustained by the leg we examine), the straight or perpendicular direction or position of the limb from above to the fetlock joint, and its obliquity or slanting position thence to the foot, can scarcely escape observation. From this examination it may be readily conceived what astonishing spring the animal must acquire by having his limb so formed, and what strength must be possessed by the ligaments of the fetlock joint, to enable it to maintain its position under the immense weight it has occasionally to sustain.

7. There are two elastic bodies attached to the upper, anterior, and lateral edge of the coffin bone: they are named *lateral cartilages*. They occupy all the space between the extensor tendon, and the back part of the sensible frog. They extend upward about three inches: anteriorly they are convex, resembling, indeed, the shape of the hoof; and their posterior or concave part is filled up with a substance resembling fat. The lower part of these cartilages is covered by the hoof.

8. The *Elastic Membranes* or *Laminæ* cover all the front and lateral surface of the coffin bone, at the extremity of which they turn off at an acute angle, stretching forwards to the side of the sensitive frog: here they form what have been named the *sensitive bars*. The laminæ are elastic, and very vascular: they are said to be about five hundred in number. These laminæ are received between corresponding laminæ in the hoof; but there is a material difference between them. The laminæ of the hoof are void of sensibility, possessing neither blood-vessels nor nerves: they appear to be very thin plates of horn, and are probably secreted or formed by the laminæ of the coffin bone. These two kinds of laminæ form the connecting medium between the hoof and coffin bone; and so strong is their union, that it is found impossible to separate them without tearing or stripping off the sensible laminæ from the coffin bone, unless the foot be macerated in water, or kept in a moist state for some time before it is attempted.

9. The *Coronary Ring* or *Ligament* is a vascular substance, situate at the upper part of the elastic la-

FOOT.

minæ: it projects considerably, and extends round the coronet, and is lost in, or rather blended with, the posterior part of the sensitive frog. When the sensitive foot has been separated from the hoof, the coronary ring appears to be covered with delicate red filaments; and in the circular groove or cavity at the upper part of the hoof, in which the coronary ligament is contained, there appear to be corresponding orifices, into which, probably, the filaments are received. The hoof is first formed by the vessels of the coronary ligament, but as it descends, or grows down, becomes thicker and stronger by the additional horn it acquires from the elastic laminae.

10. The *Extensor Tendon* is fixed or inserted into the upper and front part of the coffin bone, and the *Flexor Tendon* into the under and posterior part.

11. The *Sensitive Frog* resembles a wedge: its point is towards the toe, whence it becomes gradually wider and larger; it is divided by a cleft in its centre towards the hind part, by which it is enabled to expand or become wider when exposed to pressure. The sensitive frog is made up of cartilaginous and fatty matter, and possesses considerable elasticity: its fore part rests on that part of the flexor tendon which passes over the nut bone, and on that which is inserted into the coffin bone: from this part its cleft or division commences; only a small portion, therefore, of the sensitive frog rests on the coffin bone and flexor tendon: the wide part of the frog projects considerably behind these, forming the bulbs of the heels, and, taking a turn forwards, is blended with the coronary ligament. At its widest or posterior part there is a considerable distance between the sensitive frog and the flexor tendon, the intermediate space being filled up with an elastic fatty kind of matter: by this contrivance the frog is capable of considerable motion when it receives the pressure of the horse's weight, which it must do when its horny covering is in contact with the ground. As the back part of the frog becomes wider and is forced upward when sustaining pressure, it must have a similar influence on the elastic parts with which it is connected—the lateral cartilages, and the lateral portions of the coronary ligament. These, being

FOOT.

covered by the flexible horny matter at the top of the hoof or coronet, must necessarily have the same effect upon it: thus it is that, when the horse is in motion, there is a certain degree of motion in the heels and quarters of the hoof at the higher parts, or where the horn is flexible.

12. The *Sensible Bars*, I have before observed, are formed by an inflexion of the sensible laminæ, when they arrive at the heel, or termination of the lateral surface of the coffin bone, whence they pass obliquely forward to the sides of the sensitive frog.

13. The insensible part or hoof of the horse corresponds exactly in shape with the sensible parts which it covers and protects: in fact, the horny matter is formed by the parts which it covers, and has the same relation to them as the cuticle to the skin. This resemblance in form is easily demonstrated, by procuring a horse's foot as soon as it is cut off, and placing it in hot dung for a few days, or until the sensible foot can be readily separated from the hoof: thus a complete view may be obtained of both. Those parts of the sensitive foot that have been described, but cannot be seen on the surface, may be exposed by dissection; and the hoof may be easily divided by a fine saw, so as to give a satisfactory view of the whole.

The hoof consists of the wall or crust, the sole, the frog, the bars, and the insensible laminæ. The upper part of the crust, where it joins the skin, is named the Coronet; the lower part in front, the Toe; the sides of the crust are termed the Quarters; the quarters terminate in the heels, and the heels are connected with the frog. All the internal surface of the hoof, except the groove, that has been already noticed, at its upper part, for the reception of the coronary ligament, is covered by a beautiful laminated substance, which resembles the under surface of a mushroom. These laminæ are united or interwoven with other laminæ, already noticed, which cover all the anterior and lateral surface of the sensitive foot; forming, as has been before observed, a very secure kind of union between the crust and the internal foot. The laminæ of the hoof are elastic, and

FOOT.

yield in a slight degree to the pressure of the horse's weight. They appear to be of a horny nature, and, like the hoof, void of sensibility, being a secretion or production of the sensible laminae. The bottom of the hoof is formed by the sole, the frog, and the bars. The frog is connected with the sole and bars: it resembles a wedge in its form; but towards the heel, where it becomes wide and expanded, there is a cleft or separation in the middle. When the frog is in contact with the ground, I have already explained the effect that must be produced upon the flexible parts of the heels and quarters of the crust. The bars are of the same nature as the crust, of which they appear, indeed, to be a continuation, as the sensible bars are of the sensible laminae. The crust at the heels appears to take a sudden turn, so as to form an acute angle, and then passes obliquely forward on the under part of the hoof towards the toe, or rather the side of the frog: it is these inflected portions of the crust which are named Bars.

I have now finished the brief description I proposed to give of the horse's foot, to which the reader may refer, if he find any difficulty in comprehending the explanation that will be given of its diseases, and of the principles and practice of shoeing.

Foot, *Lameness of the.* The fore feet are more frequently the seat of lameness than any other part; and the most common cause of such lameness is a morbid irritability or chronic inflammation of the elastic membranes or laminae which cover the front and sides of the coffin bone and the bars. Sometimes this inflammation extends to the sensible sole and frog. This lameness generally increases very gradually, and is seldom attended to in its earlier stages. When it comes on suddenly, it is of a very acute kind, and attended with the most serious consequences. This will be noticed under the head *Founder of the Foot*. This tender state of the foot is generally brought on by hard riding, standing upon hot litter, and high feeding. The too common practice of breaking colts and bringing them into work at three years old, sometimes earlier, lays a foundation for this chronic lameness, as well as for other diseases;

FOOT.

and there is reason to believe that the predisposition or tendency to chronic lameness is sometimes hereditary. Horses affected with this disease have generally a morbid degree of heat in the foot, with an unusual dryness and contraction of the horn at the heels: the frog appears to be compressed, and narrower than in the healthy foot, and sometimes ragged, and discharging matter from its cleft or division. This, however, is not always the case: sometimes the frog appears quite sound and of the natural shape, and the form of the hoof does not appear to have undergone any alteration; but in this case there is generally an unusual thickness and a want of elasticity in the horny covering or hoof. The lameness is often inconsiderable, and continues so for months; and, as it appears to go off after a little exercise, there is seldom any notice taken of it: at length the horse is seen constantly resting his foot, or putting it forward, as he stands in the stable, and, when taken out for exercise or work, is found so lame that it is thought necessary to send for the farrier, and have the shoe taken off, in order to examine the foot. It generally happens, in this case, that the farrier is unable to discover any cause for the lameness, and therefore concludes that it is in the shoulder. But if he happens to suspect that the foot is the seat of the lameness, he discovers something in the shoe which he imagines to be the cause of it, and expects, by a different mode of shoeing, to make the horse go sound again. The only chance of effecting a radical cure in this disease is to turn the horse to grass in soft ground, without shoes, for several months; and, unless this be done early, it seldom effects any permanent good. I have known horses turned out for six months, and taken up apparently sound; but, after being kept a short time in the stable, and ridden a little, they became as lame as when first turned out. A frequent cause of lameness in the foot is a disease of the coffin joint, which often, indeed generally, comes on rather suddenly, but most frequently passes unobserved and unattended to, the horse not being allowed any rest on account of it until it be too late. This disease seems to consist at first in inflammation of some of the parts

FOOT.

composing the coffin joint, in consequence of a strain or rupture of a small ligament. If we examine the section of the foot and pastern, the liability of this joint to injury will be seen from the share it has in supporting the horse's weight. When this lameness is observed on its first occurrence, the horse should be bled freely in the toe, that is, four or five quarts, or more, of blood should be drawn; the sole should be pared thin, and the whole foot kept constantly moist by a bran poultice. The horse's diet should be grass or mashes, with a little nitre now and then. Absolute rest is an essential part of the treatment: blistering the leg, from the coronet to a few inches above the fetlock joint, is generally recommended.

Corns in the heels, that is, in the angle between the bar and crust, are sometimes caused by the pressure of the heel of the shoe, and sometimes by the heels of the crust or wall growing in, or being pressed in by the heel of the shoe. (See *Corns* and *Shoeing*.) Sandcrack is a consequence of a morbid heat and dryness of the hoof. (See *Sandcrack*.) This disease was very prevalent in the French cavalry when in Egypt, probably from the heat of the sand or soil. *Pumice* feet, or convex soles, are generally a consequence of chill or founder, but sometimes their origin cannot be traced to this cause. In such cases the disease takes place gradually, and without being noticed. It is accompanied with a deformity and partial displacement of the coffin bone. (See *Pumice Feet*.) The lateral cartilages, two elastic bodies attached to the coffin bone and connected with the frog and hoof, are sometimes changed into bone, and of course lose their elasticity: this causes lameness in saddle-horses, but is not of so much importance in heavy draught-horses, who are very subject to the disease. In saddle-horses, pumice feet are often connected with a morbid state of the foot, and probably are a consequence of that state. They are incurable; but the lameness they occasion may often be relieved by paring the sole and keeping the foot constantly moist; and, if that be not sufficient, by blistering the pastern also. Bony excrescences sometimes happen about the coronet, and render the motion of the small pastern

FOOT-ROT.

painful, or hinder it altogether, by uniting or binding the coffin and coronary bones together: this is named *Ringbone* (which see). There are other lamenesses of the foot, which are the effect of accident, such as picking up a nail, as it is termed; that is, stepping on a nail which happens to lie on the ground with its point upwards. In this case the nail generally enters the side of the frog near its toe or narrow part. This accident often occasions severe lameness, as the flexor tendon is not unfrequently wounded, and sometimes penetrated, so that the coffin joint is laid open. (See *Wounds of the Foot*.) The foot is often injured by treads from another horse, or by a horse stepping on his own coronet, or scratching his leg with the heel of his shoe. (See *Treads, Mange, and Calkins*.) It is likewise frequently injured by the smith driving the nails too close to the sensible parts, or laminae, in shoeing, so as to excite inflammation by their pressure. Sometimes they are driven so as to wound the sensible parts. In the former case the lameness does not often take place immediately after the injury; some days, or even a week or two, may elapse before it is discovered. In the latter case the lameness is observed immediately after shoeing. (See *Wounds of the Foot*.) The foot may be bruised by the shoe bearing on the sole improperly, or on a part that is but thinly covered with horn, as in the pumice foot. See *Shoeing*.

FOOT-ROT. This name is applied to a disease in the feet of sheep, which frequently happens, and is supposed to be contagious. It consists at first in inflammation and swelling of the skin above and between the claws, which causes severe lameness, and at length ulceration takes place and spreads under the horn. I am inclined to believe that it is not contagious, but similar to the disease in horses, named Grease, and to that in horned cattle, named Loo, Low, or Foul in the Foot. I have known the foot-rot brought on by feeding on grains, of which the sheep became very fond, and would eat them greedily when they were stale and sour. They had likewise some hay allowed them. I saw two flocks that were fed in this way at the same time: they consisted

FOOT-ROT.

of ewes and lambs: nearly the whole of them became lame. At first the disease did not spread under the horn, but there was considerable swelling, redness, heat, and tenderness, about the coronet and between the claws. Washing the parts with a solution of blue vitriol seemed to put a stop to it for a time; but as the same mode of feeding was continued, the lameness returned, and so both flocks continued until the grass began to grow, and there was no longer occasion for grains. The disease then gradually disappeared. Foot-rot, however, often happens, I believe, from other causes; such as feeding in low meadows where there is long coarse grass, or where the grass holds the hoarfrost or cold dews for a considerable time. Probably a foul habit of body, or bad state of the blood, may be a necessary predisposing cause even in this case; for it happens, I believe, chiefly in winter and about the spring of the year, after living upon hay, generally of the worst kind; and in the spring, when the flock is turned into fresh pasture, there may be too sudden a recovery from the state of poverty they are in; blood may be formed too quickly, as is the case sometimes with cows, when first turned out in the spring into quick pasture; here the superfluous blood is often determined to the kidneys, and the disease named *Red water* is produced. A similar disease sometimes happens to sheep, and occasionally a humour (foot-rot, or what may become foot-rot), similar to the grease in horses, takes place, which probably relieves the constitution and prevents other disorders. In the treatment of foot-rot we should endeavour to find out the cause or causes of the disorder, and change the food or situation of the sheep, or do whatever may be necessary or practicable to guard against those causes. The feet may then be dressed with a solution of blue vitriol, (sulphate of copper—one ounce to six or eight ounces of water); if this be not found strong enough, the blue vitriol may be dissolved in vinegar. If the disease has spread under the horn, all the loose or hollow horn should be carefully cut away, so that the dressing may be applied to the whole of the affected parts. Caustic

FOR—FOU

preparations are often used as remedies for foot-rot, such as aquafortis, spirit of salt, or quicksilver dissolved in aquafortis; but I believe the solution of blue vitriol is strong enough for every purpose, especially when dissolved in vinegar. If not, a little aquafortis may be added to it. Foot-rot is a disorder that should always be attended to in season; and, instead of merely ordering the shepherd to make use of a certain receipt, let the proprietor examine carefully all the circumstances connected with the disorder,—let him reflect upon those circumstances, and then he will be able to adopt an effectual mode of treatment. Placing sheep affected with foot-rot in a dry situation is frequently of the greatest benefit in this disease.

FORCEPS. Instruments for extracting thorns, splinters, stubs, or any extraneous body that may be lodged in a wound.

FOREHAND. The head, neck, and shoulders of a horse, or as much of the horse as the rider sees while he sits on his back. Sometimes the term is applied to the neck and shoulder only, or to the neck, shoulder, and fore legs.

FORGING. A disagreeable noise which horses sometimes make in trotting, by striking the fore and hind shoe together. To prevent this, shorten the hind toe, both of the hoof and of the shoe, and endeavour to put the horse more upon his haunches.

FORMULA. A prescription, receipt, or recipe.

FOUL FEEDERS. Horses are so named that have depraved or vitiated appetites, eating foul litter, the rubbish of old walls, or earth from the ground. Give a mild dose of physic, and afterwards confine them to a moderate but wholesome diet. A dram of carbonate of soda may be mixed with each feed of corn, and a muzzle applied to prevent them from eating their litter. They should be allowed a moderate quantity of water three times a day: if their hay is wetted, about five or six quarts each time will be sufficient. See *Feeding*.

FOUL IN THE FOOT. A disease incident to horned cattle, which appears to resemble the foot-rot in sheep. According to Mr. Skerrett, it proceeds from two causes;

FOUL IN THE FOOT.

accidents, and a morbid state of the system. The accidents which produce it are gravel or other hard bodies getting between the claws, and causing by their pressure and friction great pain and inflammation. This, he says, may be cured by the following ointment spread on tow, and bound on the part. It may be superfluous, perhaps, to add that the part is first to be washed. "Take soft soap and common turpentine, of each one pound; let them be melted together over a slow fire until they are perfectly united. The dressings," he says, "may be repeated two or three times, and never fail to complete a cure." Mr. Clater (who is a druggist as well as a cow-doctor) does not consider it as a local disease, and thinks that "cows of a gross habit suffer most by it:" generally, he observes, "it makes its appearance between the claws of the hoof in the form of a hard crack, attended with considerable inflammation, and in a short time will discharge offensive matter similar to that in grease in horses' heels. At other times, it makes its appearance in a large tumour upon the coronet (coronet) between the hair and the hoof, attended with violent pain and inflammation." It is evident, from Skerrett's and Clater's description, that they have given the same name to different diseases. Skerrett's treatment appears to be in some respects judicious, and I suppose has been found successful. But I should not trespass on the reader's patience so much as to transcribe Doctor Clater's mode of treatment, if I did not think that its injurious tendency ought to be exposed. After he has informed us that the disease is "attended with considerable inflammation," that "the pain is often so considerable as to reduce them of their flesh till they become a mere skeleton," he directs butter of antimony, oil of vitriol, or aquafortis to be applied to the part; and he says that "this may be done for two or three days together." "But," he observes, "if the part swell, and appear much inflamed," (I should be much surprised if it were not so, after the Doctor's dressing), "let it be well rubbed with the following liniment:

FOUNDER.

- Camphor, one ounce.
 - Spirit of turpentine, four ounces.
 - Oil of bays,
 - Ointment of elder,
 - Ointment of marsh-mallows,
- } of each four ounces.

And then, if the tumour be likely to suppurate, apply the following poultice:—Tar, one pound: melt it over the fire; then add linseed, in powder, half a pound.” The Doctor concludes his subject by recommending two or three purging drinks. The treatment of this disorder, or “foul in the foot,” as farriers have named it, is in reality very simple. If it be caused by gravel or other hard matter getting between the claws, after washing the part, the application of some emollient ointment will probably soon remove any inflammation it may have produced: if the inflammation run high, a poultice of linseed meal and bran will, perhaps, be more effectual. Should the beast be feverish, bleeding will be proper; if costive, a laxative drench. Should ulceration be observed after the inflammation has been subdued, try first an astringent wash, as a solution of alum, white vitriol, or sugar of lead; and if this fail, let a solution of blue vitriol be applied. If it degenerate into, or appear at first as, a foul spreading sore, discharging stinking matter, some caustic preparation will be most effectual; not omitting to pare away freely any horn under which the disease may have spread, and to keep the parts from dirt and moisture. The disease appears to be local; and bleeding or purging can only be required when the pain and inflammation have brought on symptomatic fever, attended with costiveness.

FOUNDER. A term very expressive of the ruined state of that useful animal the horse, by the immoderate and cruel manner in which he is often ridden or driven. Writers on farriery describe three kinds of founder, viz. the body-founder, the chest-founder, and foot-founder; all, however, arising from the same cause, though supposed to be more immediately produced by *chilling* the animal when exhausted or much fatigued by violent and long-continued exertion. Plunging a horse, when

FOUNDER.

in this state, into a pond, exposing him to cold wind or rain, or tying him up in the stable-yard while the groom or hostler washes his legs and thighs, and sometimes his body, are often the *exciting* cause of founder; but excessive exertion alone will, and often does, produce every kind of founder, and is at all times the predisposing cause or foundation of this disease. There is, however, a chronic kind of founder, produce both of the chest and of the feet, but especially of the latter, and caused by a long course of hard and irregular work, aided often by improper treatment, such as leaving a horse for three or four days in the stable, standing upon hot litter, without exercise, and then riding him fast for some time, and especially trotting hard upon the roads. This may be called chronic founder, and is more common in England than in any part of the world. I am inclined to believe that the common practice of breaking colts and bringing them into work at too early an age is the foundation of chronic lameness, and not bad shoeing, as is often supposed.

FOUNDER of the Body, or General Founder. We sometimes find, upon taking a horse out of the stable in the morning, after he has come off a journey, or has been ridden hard, that he is stiff and scarcely able to move. At first he appears as if every part of the body were affected, and sometimes this is really the case; at others, the fore parts or the feet appear most affected, and in some cases the loins or hind parts generally. This disorder is similar to acute rheumatism or rheumatic fever, and appears to depend on inflammation of the muscles, sometimes affecting the muscles of respiration or breathing, (that is, the intercostals and diaphragm,) and sometimes even the heart itself. The lumbar muscles are chiefly affected in some cases, and then the kidneys are generally affected also, causing pain and difficulty in staling; the horse almost constantly endeavouring to stale without voiding any urine, or only a very small quantity, and that dark, bloody, or high-coloured. When the heart is affected, the animal is in great pain, lies down, and groans dreadfully. The symptoms of this disorder bear some resemblance to those of inflammation of the bowels, but the pulse is stronger, and the eyes

FOUNDER.

very red. The last case I met with had been neglected for two days before I saw the horse, and the poor animal was then led three miles to be shown to me. It was this exertion, probably, at a time when the animal was so unfit for it, that produced the inflammation of the heart. Immediately before I saw him, five quarts of blood had been taken off. I desired he might be bled again, when half a pailful more blood was abstracted. In less than an hour I saw him again, and, finding that he was not relieved, took another half-pailful, amounting in all to four gallons, which relieved him considerably. He soon became better, and had a good appetite; but it was found necessary to keep him to a spare diet, though he was extremely weak. A few small feeds of oats raised the pulse and made the eyes look red. The horse was sent home, and seemed to be doing well in a straw-yard, though very weak and thin. At the end of three or four months he began to lose his fore hoofs, and after declining some time longer he died. On examining the body, a very large abscess had formed in the lumbar muscles, and the vertebræ on which they lay were diseased. I have known the spinal marrow inflamed in founder; and, in one case of this description, the horse, after some days, lost the use of his hind legs, and his bladder became palsied. He was killed; and on examining the body, one kidney was found slightly inflamed, and the bladder quite palsied. The spinal marrow, especially in the lumbar region, was inflamed, and a yellowish pulpy matter was found in the spinal canal. Mr. Wilkinson, veterinary surgeon, of Newcastle, found the spinal marrow inflamed in several cases of locked jaw; and I have seen locked jaw produced by whipping a horse that was rather restive in the riding-school, and making him over-exert himself. When a horse is found in the state I have described, on attempting to take him out of the stable the morning after a hard day's work, he should be immediately bled until he is quite faint, though it may be necessary to take off two or three gallons of blood for the purpose. A clyster should then be thrown up, and a dose of mild physic given. If the feet are hot and painful, take off the shoes, thin the soles, and let the

FOUNDER.

feet be kept moist by bran poultices. If the loins are chiefly affected, let them be well rubbed with volatile liniment, or liniment of ammonia, and afterwards covered with a fresh sheepskin, the wool side outward. The stable should be kept cool, and, if necessary, the horse may be supported by means of a sling and breeching. If he have any appetite, he must be fed sparingly, and with bran mash. It may be necessary to repeat the bleeding as well as the clysters; and this may always be expected, if the horse is drenched with rich gruel, or allowed and induced to eat oats, or any thing which may fill the blood-vessels too quickly. When the redness of the inner surface of the eyelids is gone off or much diminished, and the pulse is become slower, these may be considered as favourable symptoms, and we may then conclude that a sufficient quantity of blood has been abstracted. Long rest, and especially a run at grass, is necessary after this disorder.

FOUNDER of the Chest, or Chest-founder. Horses, when affected with chronic lameness of the feet, or founder of the feet, are generally thought by farriers and grooms to be chest-foundered, or shoulder-shook as they term it; but the muscles of the chest and shoulders are sometimes the seat of lameness, not only from strains, but from a painful state of the muscles, brought on by immoderate exertion, or by chilling a horse when fatigued or exhausted by much exertion. It may be at first an acute disease, like the *general* founder just described, and may terminate in chronic chest-founder; or it may be brought on very gradually, by a long course of hard work, and frequent exposure to wet and cold when fatigued. In the acute chest-founder, plentiful bleeding, opening medicine, and clysters, are the remedies to be employed, and embrocating the shoulders with volatile liniment. In the chronic chest-founder, a rowel in the chest, and blistering the shoulders extensively, are the best remedies. Opening medicine may also be useful, and a diet of bran mash with a moderate quantity of hay. If these fail, try the effect of swimming the horse. I have no opinion of those stimulating or heating medicines which have been prescribed

FOU—FRA

as sudorifics ; such as camphor, salt of hartshorn, guaiacum, opium, and antimonials, joined sometimes with ginger and spices, or caraway-seeds. If the remedies I have recommended fail, a run at grass is more likely than any thing else to succeed in effecting a cure. The name *Chill*, which is commonly given to this founder, has led to the mischievous practice of giving cordials or sudorifics, and has been the means of destroying many horses. If they are ever given without doing injury, or with an apparently good effect, it must be from the horse having been first copiously bled.

FOUNDER of the Feet, Foot-founder, or Chilled in the Feet. This, in its worst form or most violent degree, is perhaps the most painful of all local disorders ; and when it is not an attendant on general founder or rheumatic fever, the excessive pain it occasions will produce a proportionate degree of symptomatic or sympathetic fever. Horses often lose their hoofs by the violence of the inflammation ; and if the most prompt and efficacious treatment be not pursued, an incurable lameness is the best termination of the disorder that can be expected. Instead of bleeding in the neck, I would advise, in this case, bleeding in the toe or toes of both or all four feet, if they are affected, as is sometimes the case ; and the bleeding should be continued until the horse becomes faint. After this has been done, the feet should be kept constantly moist with poultices, and a dose of physic should be administered. Blistering the legs is also useful. Long rest, or a run at grass in soft ground, is as necessary to a perfect recovery in this as in other kinds of founder. When horses that are fat and unaccustomed to exercise are ridden hard, they are very liable to a dangerous fever, which is sometimes named *Body Fever*, but more commonly *Molten-Grease*, which see.

FOXGLOVE. See Digitalis.

FRACTURES. Fractures are by no means of unfrequent occurrence, and they sometimes happen from very trivial accidents. I have known a waggon-horse fracture his shoulder bone by tripping while travelling on the road, and a post-horse fracture his leg while work-

FRE—FRO

ing in a chaise. I have also known several horses break the tibia, or lower thigh-bone, by rising up in the stable, and have met with several instances of fractures of the pasterns and coffin bone. It is seldom advisable to attempt the cure of a fractured bone in horses, on account of the great trouble and expense that attend it, the length of time necessary to its accomplishment, and the chance of the animal being eventually either of little value, or altogether useless. Indeed, it is only in fractures below the knee, or the hock, where there is any probability or chance of succeeding. The method of cure consists in bringing the divided ends of the bone as completely together as can be, and keeping them in that situation by suitable splints, bandages, and plasters, until the ends of the bone are firmly united. The horse must be prevented from resting on the limb, till the union is accomplished. When the end of the broken bone penetrates through the integuments, and appears externally, it is termed a compound fracture.

FRENZY, OR PHRENSY. *Phrenitis.* Inflammation of the brain. This disorder is distinguished by a violent delirium, which makes it difficult to do any thing to horses so affected, or indeed to come near them: sometimes they are so violent as to drive every one out of the stable. I have known a horse in this disorder jump through a small window five feet from the ground. Nothing but plentiful bleeding can afford any relief in this disorder, and the bleeding should always be continued until the horse be quite faint. When he has become quiet, throw up a clyster, and give a dose of physic. The horse must be kept to a spare and opening diet for some time afterwards. Should any symptom of the disorder return, the bleeding must be repeated, and continued until the horse be completely relieved. The head may be blistered, a seton passed under the foretop, and a rowel under the jaws. See *Brain* and *Staggers*.

FRET. See *Colic*.

FROG. The back part of the bottom of the horse's foot. See *Foot* and *plute*.

FROG, ARTIFICIAL. Two contrivances of this sort have been brought before the public: the one, an iron

M

FRO—FUM

wedge, the thin part of which is confined under the toe of the shoe, while the back part rests on the frog, and extends backwards to the basis or wide part of the frog. It is kept in its place by a transverse slip of iron, the two ends of which come under the shoe. There is also a hole through the back part of the iron wedge, through which a piece of tape passes, and is tied on the front of the hoof. The other contrivance is an iron case exactly suited to the frog. The former is intended as a means of applying pressure to the frog while the horse is in the stable, the other as a defence to the frog.

FRONTAL SINUSES. Two cavities in the bones of the forehead, immediately over the eyes. In glanders, these cavities sometimes contain matter, and in sheep they often contain a worm, which is deposited by a fly, and crawling up the *septum nasi* finds its way into the frontal sinus, where it is nourished until full grown, when it generally comes out again. Sometimes they are very troublesome to sheep, and make them almost delirious. The common remedy is knocking off the horn, as the cavity of its bone communicates with the frontal sinus.

FRUSH. A name formerly given to the frog of the horse's foot, and sometimes to a disease of the frog, which is now named Thrush, or Running Thrush. See *Thrush*.

FUMIGATION. The extrication of certain vapours from nitre, salt, or other substances, in infected stables, for the purpose of purifying them. Many preparations have been recommended for fumigation; only two of them, however, appear to be worth notice.—1st. In a large dish of hot sand, place a cup or other vessel with some powdered nitre in it; pour upon the nitre a quantity of oil of vitriol, equal to half its weight. No person can remain in the stable while this process is going on, as the vapour which arises is of a very suffocating nature. To retain the vapour in the stable a sufficient time, the door, windows, and every aperture should be carefully closed.—2nd. Instead of the nitre, put into the cup a mixture of powdered manganese and common table-salt, of each equal parts: upon this mixture pour half its weight of oil of vitriol, and immediately after leave the stable, as the fumes from this

FUN—GAL

mixture are far more suffocating than the former, but certainly more effectual. In one experiment, I found that the infectious property of glanderous matter was destroyed by being exposed to this vapour. Before a stable is fumigated, all litter, hay, dust, &c. should be swept out, and the whole stable well cleaned. The rack, manger, and wood-work between them should be scraped and thoroughly washed; and the fumigation is to be made immediately after, while the wood is moist. The following day the door and windows should be thrown open, and suffered to remain so until the vapour is perfectly gone.

FUNDAMENT DOWN OR FALLEN. See *Falling of the Fundament*.

FUNGUS. A term applied to a morbid growth of solid matter from an ulcer. The name is also applied to a certain class or order of vegetables, of which the mushroom is one.

FURUNCLE. A boil or swelling, attended with violent inflammation.

FUZEE. A term formerly applied to splents, when situated high up in the leg, just under the knee. See *Splents*.

G.

GALANGAL-ROOT. A warm stomachic bitter but seldom employed. The dose, two, three, or four drams, or more. It may be given in the form of an infusion, decoction, or in powder.

GALBANUM. A gum-resin sometimes employed as an expectorant and antispasmodic. The dose, three or four drams. It is used also in the composition of warm adhesive plasters, such as gum and diachylon plaster.

GALL. A common name for bile. See *Bile*.

GALL, from the saddle or harness. (See *Fistula* and *Sitfast*.) It may not be amiss, however, to observe, that the ointments usually employed for saddle-galls are injurious while the part is inflamed. See *Elder* and *Marsh-mallows*; *Ointments*, and *Back Galled*.

GALL-BLADDER. The horse has no gall-bladder or reservoir for bile. A considerable quantity of bile, how-

GAL—GAR

ever, is formed by the horse's liver, and is conveyed by the hepatic duct into the first intestine or duodenum. In the cow and sheep, the gall-bladder is of considerable size, and in the former will contain nearly a pint. The horse, notwithstanding the more simple structure of his liver, in being without a gall-bladder, is subject to jaundice or yellows; but more commonly, I believe, from the pressure of a loaded stomach or bowels, than from an obstruction in the hepatic duct by gall-stones. See *Jaundice*.

GALLOP. See *Paces*.

GALLS. Nutgalls. A powerful astringent, but not used in veterinary medicine.

GAMBOGE. A yellow, gummy, and resinous substance. In the human body it is a strong purgative; but in the horse it is necessary to give from four to six drams to cause purging. For all veterinary purposes, I believe, aloës are preferable to gamboge.

GANGLION. This term is applied to a natural enlargement or knot in the course of some of the nerves. The same name is also given to an encysted tumour which sometimes takes place about joints, or in the sheath of a tendon. Windgalls are of this kind. See *Windgalls*.

GANGRENE. An incipient mortification. In this stage of the disease, there is generally a remission of pain. When the part affected is quite dead, the mortification is named *Sphacelus*.

GARGET, of the limbs and of the maw. Two diseases described by some writers on cattle-medicine. According to Mr. Skerrett, garget of the limbs, called also *joint-yellows*, or *rheumatic lameness*, more commonly affects working oxen than cows. The animal walks with pain and difficulty, and has sometimes a heaving of the flanks; the coat stares and looks unhealthy, and the animal is hidebound. The joints are sometimes heard to crack upon being moved. He advises bleeding and a purgative drench: after which he prescribes a warm drench, composed of camphor, two drams; tincture of opium, half an ounce; balsam capivy, one ounce. To be given in ale.

GAR—GAS

Garget of the Maw implies a state of costiveness and accumulation of hard excrement in the third stomach and bowels, in consequence of a depraved appetite, which leads the animal to eat acorns, leaves, and other indigestible matter. It is known by great heaviness, weakness, loss of appetite, and hard dung. Give the following purgative, and throw up a clyster :

DRENCH.

Barbadoes aloës, powdered, half an ounce.

Common salt, four ounces.

Ginger, two or three drams.

Carbonate of soda, half an ounce.

Water, one quart.

Gin, three or four ounces.

Mix for one drench. See *Indigestion*, vol. iv. of *White's Farriery*.

GARLIC. Gibson and some other writers on farriery considered garlic as a valuable remedy in coughs and asthmatic complaints. He advises two or three cloves cut small to be given in each feed ; and observes, that " by continuing this practice, with right and well-timed exercise and careful feeding, he has known abundance of horses recover to admiration, even when there had been a suspicion of their wind." It is a fact that cannot be too generally known, that the following preparation of garlic has, to my certain knowledge, cured several cases of epilepsy or fits in the human subject ; a dreadful disease, that seems to have baffled, in most instances, every effort of medical skill. In one case, the patient had been afflicted with the disorder about twenty years, and had been under the care of many medical practitioners without receiving any benefit.

THE RECIPE.

Garlic, half a pound.

Water, one pound.

To be placed in an oven until the virtues of the garlic are extracted. Two tea-spoonsful of the strained liquor to be taken before and after every meal.

GASTRIC JUICE. A juice formed in the stomach for the purpose of digestion. See *Digestion*.

GASTRITIS. Inflammation of the stomach. See *Stomach, Inflammation of the*.

GAS—GID

GASTROCELE. Hernia or rupture of the stomach.

GAUNT-BELLIED. A term applied to a horse when he is drawn up in the flank, or, as the French term it, *enflanqué*.

GELATINE. Jelly. A component part of animal matter.

GELDING. A castrated horse. Such are the horses generally employed in this country. It is certain, however, that stallions are much more vigorous and freer from disease than geldings, and will do more work, and keep a better appearance as to coat and flesh, upon the same quantity of food. The operation of gelding is named Castration. It is thought to prevent, in a great degree, the accident of hernia or rupture. See *Castration*.

GENTIAN-ROOT. A good stomachic bitter: the dose, two or three drams, with a little ginger, in half a pint or more of warm ale. It is the principal ingredient in the old celebrated stomachic cattle-medicine named *diapenté*.

GESTATION. Being with young. The time of gestation in the mare is eleven months; of the cow, nine months. See *Foaling* and *Calving*.

GID, or GIDDINESS. A disease in sheep, so named from their appearing giddy and turning round in a circle when driven or hurried. It is caused by water in the ventricles of the brain: most commonly the water is contained in thin bladders, which are supposed to be animated, and are named *hydatids*. In the latter stages of the disease, the bladder often bursts, and the water, instead of being confined, flows into all the cavities of the brain. I have known the bladder, by its pressure upwards, gradually cause an absorption of the roof of the ventricle, the *dura mater*, and even a small part of the skull: it then burst, and the fluid was discharged. This relieved the animal considerably, but he never perfectly recovered. The pressure of the hydatid appears to be almost always in this direction; and if we examine the skull of a giddy sheep, we shall generally find a spot where the bone is wanting, and which yields to the pressure of the finger. It is generally on the right side of the skull, near or behind, the part where the horn

GIG—GLA

grows. I have several times made an opening in this soft spot with a penknife, and have then seen the hydatid, or rather a small part of it, forcing its way through the aperture. If this be opened and the water let out, the hydatid may, with care, be drawn out. It is a fine semi-transparent bladder, with a number of small, white, seed-like bodies at its lower part. It is oftener found in the right than in the left ventricle; and when in the former cavity, I believe it always causes blindness in the left eye. I have found them also in the substance of the brain, and in the cerebellum or little brain. When in the cerebellum, they cause partial paralysis, generally of the hind parts on one side, and that the left. I have been informed that some shepherds in Dorsetshire cure giddy sheep sometimes merely by puncturing the soft part of the skull before described, so as to open the hydatid and let out the water. Sheep and lambs are subject to common dropsy of the brain, or *hydrocephalus*, and dropsy of the spinal marrow. The former causes paralysis, and proves fatal after some time: the latter causes paralysis, especially of the hind parts. See *Dropsy of the Brain*.

GIGGS, or BAGS. These are painful tumours on the inside of the horse's cheek, near the angle or corner of the lips: they often cause considerable inconvenience, and prevent the animal from feeding or masticating with ease. The cure consists in cutting off the tumour with scissors or a knife, and washing the part afterwards with a solution of white vitriol, blue vitriol, or alum.

GINGER. This well-known root appears to me the most useful aromatic stimulant for veterinary purposes of any we are acquainted with. The dose for horses is from two or three drams to six. Cattle-doctors usually give larger doses: Dr. Clater, in several of his drenches, prescribes two ounces with other stimulants.

GLANDERS. A contagious disease, peculiar to the horse, the ass, and the mule. Glanders often attack horses that are in good condition; and so little is their general health sometimes affected by the disease, that I have often known glandered horses continue their work for four or five years without any interruption, except

GLANDERS.

from lameness or other accidents. For more than ten years I have had the care of several teams of glandered horses, which were regularly worked from Exeter to Plymouth. Every precaution was of course observed to prevent contagion: detached stables were provided at every place where they halted, and the greatest care taken to prevent their having any kind of communication with other horses. The time a glandered horse continued fit for work varied considerably: in many instances they have appeared strong and worked regularly for four or five years; sometimes only a few months; most commonly, however, they lasted two or three years. They rarely died of the disease, for as soon as they became incapable of continuing their labour so as to earn the expense or value of their keep, they were destroyed. The proprietor having a great number of horses working on other roads, whenever one of them became glandered, he was sent to the glandered teams; and by such recruits, the strength of these teams was kept up for many years. It is worthy of remark, that when the superintendence of the horses, from which the glandered teams principally derived their reinforcements, devolved on a person who had been convinced by some decisive experiments that the disease was contagious, and who was scrupulously careful in separating a horse from others as soon as the slightest suspicion arose of his being infected, from that time recruits became more and more scarce; and it was found necessary, as a glandered horse fell off, to replace him by one that was free from the disease: at length very few glandered horses remained, and at this time there is not one left. During the time I attended these glandered teams, I was employed for about two years by another proprietor of waggons, who also kept a glandered team: here the stables and general management of the horses were but indifferent, and the work allotted them too hard for their keep and condition; that is, they were not fed so well, or in any respect so well treated as the horses before noticed: the consequence was, the numbers of glandered horses increased rather than diminished, and they became unfit for work in a much shorter time: many of

GLANDERS.

them became farcied as well as glandered. The above circumstances are stated merely for the purpose of showing that the following observations on glanders are grounded on experience: and it may not be improper to add, that previous to this, the disease particularly engaged my attention during the seven years I had the honour to serve as veterinary surgeon in the Royal Dragoons.

There are two kinds of glanders; the mild and the virulent, or the chronic and acute. The symptoms of mild glanders are a discharge of matter from one or both nostrils, and a swelling of the glands or kernels under the jaw. When the discharge of matter is from one nostril only, which is often the case, the glands on the same side only of the under jaw bone are affected. The matter discharged from the nostril is not of a whitish colour and cream-like consistence, as it usually is from an abscess, or from strangles; it has rather a glairy appearance, and sticks about the upper lip and exterior part of the nostril. The discharge is seldom so considerable as in strangles or violent colds. There is no cough, and the general health does not appear in any degree affected: the horse feeds well, is lively, and continues in good condition. On inspecting the nostrils, ulceration is seldom observed, nor has the matter which is discharged any offensive smell; yet this has by many been considered as a distinguishing mark of glanders. The disease often continues in this stage a considerable time, particularly when the patient is of a hardy constitution, was in good condition at the time he was attacked, and is not over-worked and badly fed. But when it attacks horses that are pent up in hot close stables, employed in violent exertion, and when over-heated, exposed to rain and cold winds, and particularly if worked beyond their condition and strength, the progress of the disorder is usually more rapid, and the first symptoms are generally of a formidable appearance: hence it is that stage-coach and post-horses are often so violently attacked, and that in such horses the virulent or acute glanders, sometimes accompanied by farcy, are most frequently met with. In virulent glan-

GLANDERS.

ders there is generally a considerable discharge, often from both nostrils, and the glands under the jaw are much enlarged. The inner parts of the nostrils are commonly ulcerated; and when the matter has an offensive smell, or is mixed with blood, though the ulcers cannot be seen, there can be no doubt of their existence in the higher parts of the nostrils. When the disease has become thus virulent, there is generally a falling off in strength and flesh, respiration is often impeded by the matter and ulceration within the nostrils, abscesses form in the lungs, and the horse sinks under the complaint. The disease is sometimes preceded by languor, weakness, loss of flesh, a dry staring coat and tight skin, and want of appetite. In this declining state the horse may continue two or three weeks: at length there is a copious discharge from the nostrils, the glands become enlarged, and the progress of the disease in such cases is generally rapid.

Method of distinguishing glanders from some other diseases which may be mistaken for it. In catarrh or cold there is often a discharge from both nostrils; but it is attended with cough, dulness of the eyes, and general indisposition, which is not the case in glanders. In strangles, there is frequently a discharge from the nostrils, and a swelling under the jaws. Here also the discharge proceeds from both nostrils: the matter is generally of a whitish colour, like the matter of an abscess. The swelling under the jaw is more diffused than in glanders; it is also tender, becomes gradually larger, and at length suppurates and bursts: soon after this happens, the horse gets well. Strangles are also attended with general indisposition, dulness of the eyes, and cough; and not unfrequently before the swelling suppurates, there is considerable difficulty in swallowing. Chronic catarrh or mesenteric consumption is often mistaken for glanders. From sudden changes of temperature, that is, by suffering a horse to stand in a cold wind or rain after being heated by exercise, the lungs may be affected with a chronic kind of inflammation, accompanied by a similar affection of the mucous membrane lining the nostrils and windpipe. In this case

GLANDERS.

the horse generally falls off in flesh and strength, the coat becomes dry and rough, and the skin sticks close to the ribs. The horse has commonly a tolerable appetite. There is a discharge of matter from the nostrils, and a swelling of the glands under the jaw. As the disease proceeds, tubercles are formed in the lungs, and the mesenteric glands become enlarged. The tubercles gradually increase in size, at length are inflamed and suppurate, the lacteals are completely obstructed, and the animal dies. (See *Consumption*.) This is usually the progress and termination of the disease, when the animal is neglected, or often exposed to the cause which originally produced the complaint. There is often considerable difficulty in distinguishing the earlier stages of this disorder from glanders. In one circumstance, however, there is a material difference. The former has never been known, I believe, to be communicated to other horses standing and feeding with the patient; whereas it is a well-established fact that glanders are contagious, as will be presently shown. This circumstance led me, in a former publication (see *Veterinary Medicine*, vol. i. and iii.), to propose a *test* for distinguishing glanders from other diseases. Since that time I have given it a further trial, and the result has fully confirmed what was there said of it. The best mode, perhaps, of explaining this subject, will be to relate the last case in which it was employed. March 23, 1816, I was desired to examine a mare that was said to have the strangles coming on: there was a considerable enlargement of the gland on one side of the under jaw, and a small discharge of matter from the corresponding nostril. The proprietor was informed that it was very unlike strangles, as there was neither cough nor dulness of the eyes; in short, the mare appeared to be in perfect health and in good condition. The swelling was blistered and some medicine given. About a fortnight after this, I found the mare precisely in the same state; but about a week before, I discovered that a pony which stood next the mare had had a discharge from the nostril and a swelling under the jaw for some time: but here the gland was not much enlarged, the discharge

GLANDERS.

was inconsiderable, and he was in perfect health and condition. I discovered, also, that the proprietor of these horses had lost a horse from glanders about twelve months before; but the place where this occurred was at a considerable distance from his present residence, and no kind of communication was known to have taken place between that horse and those now affected. Another week elapsed, and no alteration was observed. The proprietor became anxious to ascertain whether it was glanders or not, as he was determined to destroy them if it proved to be that disease. As the mare was of considerable value, I proposed the *test*, which was assented to, and a healthy young ass about two years old was purchased for the purpose. A little of the hair about the middle of the ass's neck was cut off on both sides, so as to leave a bare space about the size of a dollar. A small lancet was then introduced under the cuticle from above downward, but so as to cause a few drops of blood to appear: the same was done on the other side the neck. Some matter was then taken from the mare's nose, and introduced by means of a small thin slip of wood, about the size and form of the lancet, into the orifice on the right side of the neck. Some matter was then taken from the pony's nose, and inserted with a fresh slip of wood into the orifice on the left side. The ass had no communication with the suspected horses, but was kept in a different stable, and had a clean bucket to drink from. Two days after the operation, the inoculated part on both sides was swollen and very tender: the next day the swelling was found to have increased considerably, and corded veins (lymphatics, see *Farcy*), as farriers term them, were seen proceeding from the inoculated parts on both sides. The scabs being removed, the inoculated parts were found to have become large foul ulcers of a peculiar appearance: these gradually spread. Small tumours resembling farcy buds appeared on the corded lymphatics: these burst and became foul ulcers. About a week after the operation, a discharge was observed from the left nostril; and two or three days after, the glands under the jaw on the same side were a little swollen.

GLANDERS.

The discharge from the left nostril and the swelling of the glands gradually increased, and in little more than a fortnight the animal was decidedly glandered. There was not the least discharge from the right nostril, nor were the glands on that side affected. The ass was now destroyed. The membrane lining the partition of the nostrils on the left side was much ulcerated; on the right side there were no ulcers, but the membrane appeared redder than usual. There was a small quantity of matter in the left frontal sinus, and the honey-comb process of the ethmoid bone was highly inflamed. On the right side these parts were healthy. On passing the hand over the surface of the lungs, small tubercles were felt. The ass fed and drank well to the last; but the ulcers had spread considerably. In this case the constitution was more speedily affected than we generally find it to be. In some instances a month has elapsed; and in one case it was two months nearly before the horse was decidedly glandered. A young ass appears to be the best subject for the experiment, being more readily affected than a horse. That glanders are a contagious disease, is, I believe, universally admitted by those who have duly investigated the subject; but Mr. Coleman and many eminent practitioners are of opinion that it is often produced by other causes than contagion, particularly by sudden changes of temperature and confinement in close stables. It must be admitted that glanders have often occurred when it cannot be ascertained that the horse has any time been exposed to contagion; but it should be recollected that he may have been inadvertently so exposed, that is, he may have been fed in the same stall, and been watered from the same bucket, which had before been used for a glandered horse; and it is an established fact, that a considerable time may elapse after the reception of the poison, before the glanderous symptoms make their appearance. When a sound horse was put into the glandered teams already mentioned, I have several times noticed the length of time he remained free from the disease. The shortest time I recollect was between two and three weeks; more commonly it was from

GLANDERS.

one month to two; and in some instances the disease was not caught. The last sound horse that was sent to the glandered team was about twenty years old, but of a hardy constitution. I have frequently examined him; and though he had, when I last saw him, been more than six months working and feeding with glandered horses, and drinking out of the same trough, he had not the slightest symptom of the disease. As to the manner in which glanders are communicated, there have been various opinions: I have proved, however, that it is not by any invisible vapours or effluvia that escape from the diseased horse, nor by the glanderous matter being applied to the nostril, an opinion that very generally prevails. I have not, it is true, obtained any direct or positive proof from my experiments, that it is by swallowing glanderous matter the disease is communicated; yet there appears to be no other way in which it can be accounted for. According to Mr. St. Bel, the first professor of the veterinary college, "the virus (glanderous matter) mixed with a little flour, given to three horses for the space of a week, communicated the disease to the youngest in the space of a month; the two others did not sicken till some time after." I have observed, in the third volume of my *Treatise on Veterinary Medicine*, "that after having paid considerable attention to the subject, I have not been so fortunate as to discover a remedy for glanders; nor has it ever come to my knowledge, that any other practitioner has been more successful. Mr. Coleman has devoted much time and attention to the subject: I believe he has tried, without success, every method and medicine that he himself could devise, or that could be suggested by others. Many other practitioners have been no less industrious, and equally unsuccessful. With such authorities as these, I think no one will hesitate in admitting that the glanders have hitherto proved incurable." Since that time I have continued my attention to the subject, but have found no reason for altering my opinion. I have certainly heard of some *infallible remedies*, and have read a book, the professed object of which is to show, that glanders are not, as Mr. Coleman teaches, a disease "highly infectious," (Mr. Cole-

GLA

man says the disease is contagious, that is, propagated by contact,) "and to rescue from neglect and premature death a valuable animal, which in all probability, under proper treatment, might be preserved." This book contains *eight* prescriptions for glanders. The efficient medicines they contain have been repeatedly and unsuccessfully tried many years ago. In the first we have two or three drams of sulphate of copper (blue vitriol): in the second there is an addition of half a dram of calomel: in the third, one dram of calomel, and half a dram of opium: in the fourth, one scruple or half a dram of sublimate, and one dram of opium: in the fifth, half a dram or a dram of Æthiop's mineral (the usual dose is about an ounce), and half a dram of opium: in the sixth, one dram of white arsenic, and half an ounce of asa-fœtida: in the seventh, two drams of arsenic, six drams of columbo-root, and half a dram of opium: in the eighth, two drams of sulphate of iron (salt of steel), one ounce of bark, and half a dram of opium. From what has been said on this subject, it may be inferred, that the most effectual mode of prevention consists in separating a suspected horse from others; and being particularly careful that sound horses have no possible opportunity of swallowing glanderous matter, which may be dropped upon hay or corn, upon the litter, or in a trough of water, or upon the manger, or parts of the stable which horses sometimes are apt to lick. The most effectual method of purifying a glandered stable is to cleanse it thoroughly and fumigate it. (See *Fumigation*.) A more particular account of glanders may be found in the third volume of my *Veterinary Medicine* or *Farriery*.

GLANDS. Soft spongy substances in various parts of the body, which serve to secrete particular humours from the blood. They are vulgarly named Kernels.

GLAUBER'S SALT. Sulphate of soda. A mild aperient and diuretic. The dose, from half a pound to a pound, in from one to two quarts of water. It is more frequently given to cattle than to horses. One method of giving this medicine to horses is to dissolve a pound and a half of the salt in a pailful of water, and

GLE—GOR

keep the horse without water until the whole be drank. I was informed by a veterinary correspondent in Ireland, that in the distemper which prevailed among horses in 1815, he gave Glauber's and Epsom salt with great success.

GLEET. A discharge of a mucous or glutinous fluid from the urethra, vagina, or nostrils. A thin discharge from ulcers is called *gleety* or ichorous.

GLOTTIS. The chink or narrow part of the larynx or top of the windpipe. So great is the sensibility of this part, that if a single grain of oats happen to fall into the larynx, an accident that sometimes happens, the most painful and distressing symptoms are produced; and unless the extraneous matter be expelled by coughing, or removed by an operation, a fatal inflammation will be the consequence. See *Bronchotomy* and *Choking*.

GLUTEN. A component part of animal matter and several vegetables, especially wheat.

GLYSTERS. See *Clysters*.

GORGED, GORGING. A term sometimes applied to swelling of the legs; but more frequently to an animal with an overloaded stomach. When cattle are in this state, they are said to be blasted, blown, or hoven; probably from the quantity of air or wind that is generated, and by which the stomach is so distended that cattle are often suffocated by it. In cattle and sheep, it is the first stomach, commonly called the belly or paunch, and anatomically *rumen*, that is thus distended. It most commonly happens when cattle or sheep are first turned into rich pasture, such as clover; but I have seen it happen also in cattle that have been fed on hay, and in stall-fed cattle that have been kept chiefly on potatoes. When an animal is gorged with green food, such as clover, a prodigious quantity of air is often generated; and unless the animal is quickly relieved, by passing an instrument into the stomach and letting out the confined air, or stabbing the animal in the left flank, between the last rib and the hip bone, in order to let it out, suffocation takes place in a short time. It is always necessary to bleed freely on these occasions, in order to relieve the heart and lungs, which, if the animal dies, are

GOU—GRA

always found gorged and suffocated with blood. The brain also is oppressed, in consequence of the heart and lungs being thus obstructed. Some time ago I examined a fine cow at the Kennel, that was found dead in a field. The belly or paunch was enormously loaded with coarsely masticated hay. It contained, I think, including the water with which it was moistened, about three-quarters of a hundredweight. The paunch had evidently contained, in addition to this load, a considerable quantity of air, which must have escaped after death, for it appeared to have been greatly distended, being, when I examined it, flaccid, and fallen in upon its contents: there was still sufficient space in it, notwithstanding the load it contained, to hold many gallons of water. The heart and lungs were quite gorged with blood, and nothing could be more evident than that the immediate cause of death was suffocation. On this account, it was thought unnecessary to examine the brain, though I have no doubt we should have found its blood-vessels loaded, and water in the ventricles. The second and third stomach were loaded like the first. The cuticular coat of the paunch was easily separated from the muscular coat, and the latter was highly inflamed. The fourth stomach was nearly empty, and free from disease, except a slight degree of inflammation near the *pylorus*. This cow wanted only three weeks to the time of calving. (See *Blasting*.) Horses are often gorged with food, but not exactly in the way that cattle are. The symptoms in horses are those of flatulent colic, commonly named Fret or Gripes, or of a more serious disease denominated Stomach or Sleepy Staggers, a disease in some respects resembling apoplexy. See *Staggers* and *Colic*.

GOULARD'S EXTRACT. *Subacetas plumbi*. A cooling lotion, used externally in cases of inflammation from bruises, &c. See vol. ii. of *White's Farriery*.

GOURDINESS. Swelling of the legs.

GRAINS. Malt from which the fomentable matter has been extracted by the brewer. Horses that are fed on grains are often subject to itching humours and mange. (See *Calkins*.) Both horses and cows, after

GRA

being accustomed to grains, eat them greedily, and, if not prevented, will frequently gorge themselves with them. Cows give a good quantity of milk when fed on grains, but the quality is indifferent, being thin and watery. Sheep eat them greedily, even when stale or sour. In two flocks of ewes and lambs that I saw fed on grains (which were frequently given when stale or sour), a great number of them had the foot-rot, and many others itching humours on the skin. I do not consider grains a desirable kind of food either for horses or cattle, unless given while fresh, and in moderate quantity. They would be improved, probably, by the addition of bruised oats. Malt-dust is sometimes given with grains, but this I consider a still more unwholesome kind of food than the latter. Whenever malt-dust is mixed with grains, it should be when the latter are hot from the mash-tub. This softens the malt-dust, and renders it more easy of digestion.

GRAINS OF PARADISE, or the greater cardamom-seeds. A hot stimulating seed, often prescribed in the cordial drenches of cattle-doctors. They seldom give less than one ounce at a dose, and generally add other stimulating ingredients.

GRAMINIVOROUS ANIMALS. Animals that feed on grass.

GRANIVOROUS ANIMALS. Animals that feed on grain. The teeth of the horse appear better formed for masticating grain, than those of the cow and sheep; while those of the latter have sharp edges and deeper depressions, which render them more fit than the horse's teeth for masticating long, coarse, fibrous grass or hay.

I was once desired to look at a cow that was attacked with flatulent colic, fret, or gripes. I found she had been feeding on unbruised oats, without any mixture of chaff. I gave her an opening drench, with a little laudanum, which, after some time, relieved her, and brought off with her dung a considerable quantity of oats nearly unchanged. Not long after, I had occasion to visit another cow that had been feeding on unbruised oats, and gave the same opening drench, with a similar result. I am inclined to believe, from these circum-

GRA

stances, that the cow cannot easily masticate or ruminate unbruised oats, nor, perhaps, any other grain; it should, therefore, always be bruised for her, and mixed with fresh grains or a bran mash. I have known a cow, however, put up for fattening, eat half a peck of unbruised oats three times a day, without suffering inconvenience from them; on the contrary, she improved considerably, but discharged some oats with her dung, which, on examination, were found unchanged and full of flour. From this it is evident that, if they do not happen to disagree with the animal, some part of each feed is wasted, passing through the bowels unchanged.

GRANULATIONS. A term applied to the little red, grain-like, fleshy bodies, which arise on the surface of ulcers and suppurating sores. Their use is to fill up cavities and approximate their sides.

GRAPES. A name applied to the excrescences on a horse's heels, which are sometimes produced by the grease. See *Grease*.

GRASS. The best food for cattle, whether for the dairy or for the butcher, are the natural grasses, though the milk may perhaps be improved in quantity and quality by the artificial grasses, when given with discretion; and the process of fattening may be expedited by the same means, as well as by a judicious use of roots and grain. Mangel-wurzel (both the leaves and the root) has been given with advantage to milch cows, as well as to cattle that are fattening; but, if given too freely, will produce lethargy, staggers, and inflammatory disorders. The natural grasses, as they are termed, are seldom productive of disease, unless it is when stock are first brought from the straw-yard and put suddenly into luxuriant pasture. See *Fattening*.

GRAVEL. Gravel, or a collection of earthy matter in the kidneys or ureters, is not a common complaint in horses or cattle. I once had a stone given me, that was taken from the pelvis of a horse's kidney, that weighed between three and four ounces. Mr. Barrett, veterinary surgeon of Taunton, extracted a small stone from the uretara of a horse, near its extremity, which had obstructed the flow of urine for some time; and many

GRAVELLING.

other cases of calculus in the bladder and urethra have occurred. We often meet with cases of pain and difficulty of staling in horses, though less violent than that which takes place in inflammation of the kidneys. The disorder generally goes off by giving a little nitre with bran mash, or a clyster. Such cases probably depend upon the acrimony of the urine, or a morbid irritability of the bladder, or both. (See *Bladder*.) Gravel in the pelvis of the kidney, or in the ureter, would cause pain in moving the hind parts, and in making pressure on the loins, with a considerable degree of pain and difficulty in staling. The bowels should be opened by clysters, and, if necessary, an oily laxative may be given with bran mash, linseed tea, or a solution of gum arabic. Lime-water may be of use, or a small quantity of carbonate of potash or soda, when the urine contains acid; and, if the pain be considerable after the bowels have been opened, a dose of opium, or an opiate clyster, may be administered. (See *Clyster*.) Bleeding is generally necessary, especially if the pulse be quick and the breathing disturbed; and, when this is the case, a large quantity of blood should be taken off. Some benefit may also arise from covering the loins with a fresh sheep's skin, after rubbing them with some stimulating liniment or embrocation.

GRAVELLING. A horse's foot is sometimes bruised by gravel lodging between the shoe and the sole of the foot, generally towards the heels. Matter often forms in consequence of the bruise, and, if vent be not given to it below, it breaks out at the coronet. Take off the shoe, and pare away as much horn as will give a free exit to the confined matter; dress the part with friar's balsam, or tincture of myrrh; and put on the shoe so that it may not press on the tender part. If the foot be much inflamed, wrap it up in a warm emollient poultice. Should the lameness prevent the horse from taking exercise, some bran mash, with, at times, a little nitre, should be substituted for his corn. When it has been found necessary to pare away any of the sole of the foot, some tar ointment should be applied, after the bruised part is healed, to promote the reproduction of horn. If

GREASE.

the bruised part of the sensible sole does not appear to heal readily by the application of friar's balsam or tincture of myrrh, a solution of blue vitriol should be applied; or the sore may be touched with lunar caustic, or the butter of antimony.

GREASE. An inflammation and swelling of the horse's heels, sometimes extending upwards, even to the knee or hock joint. On examining the part, it will be found very hot and tender. These symptoms are soon followed by a discharge of stinking matter from the heels. The disease most commonly attacks the hind legs, but the fore legs also are liable to it. The animal appears to suffer considerable pain, and when first moved he suddenly catches up the affected leg (when it is the hind leg) as if he were cramped, and keeps it in that position a short time, hopping about, when forced to move, upon the opposite leg. This he often does; also, when both hind legs are affected, drawing up that which is most painful. Grease is generally a local disease, but it sometimes appears to depend on general or constitutional derangement. It is produced by various causes, and is usually ascribed to a foul habit of body: bleeding, purging, and rowelling, are the remedies commonly employed; but Mr. R. Lawrence very justly observes, that this mode of treatment is not always attended with success; and he considers debility in the system to be generally the original cause of grease, though other circumstances may concur in its production. "Debility," he observes, "may arise from directly opposite causes, viz., repletion and exhaustion. The healthy state of all animals is constituted by a due and regular circulation of the blood, and a uniform maintenance of the natural evacuations of the body. Whatever disturbs any of these functions will produce debility. In a full plethoric habit, the vessels which are appropriated for the circulation of the blood become oppressed by being overloaded, and are thus rendered incapable of performing their office; hence debility takes place, and the legs (particularly the hind legs), which, by their situation, are most remote from the centre of circulation, and through which the blood has to return in opposition to its own gravity, become

GREASE.

swelled for want of the accustomed absorption. On the other hand, when the horse is lean and emaciated, either from want of a sufficient quantity of nutritive food, or from excessive labour, the circulation of the blood will be languid from a deficiency of stimulus, and debility will naturally ensue." In addition to either of the above-mentioned causes, he thinks the following may be given as collateral promoters of the disease; viz. "the season of the year, unnatural confinement in the stable, the acclivity of the pavement of the stall, cutting the hair off the heels, and want of proper exercise and cleaning. In the winter season, at which period the grease is most prevalent, the insensible perspiration of the body is neither so regular nor so profuse as in the summer; but nature generally provides against this decrease by increasing the discharge of urine, and the expiration of vapour from the lungs: and this mode of expulsion would be fully sufficient for the purposes of the animal economy, if the horse remained in a state of nature. But it is far different with him in a domesticated state, in which he is alternately exposed to a cold and warm atmosphere, as he is within and without the stable. The secretion and evacuation of urine are disturbed in their process by forcing him to proceed in his labour at the moment when the fulness of the bladder stimulates him to discharge its contents; and though the perspiration may be increased to an excessive degree by exercise, yet it will be found, that the result of excessive labour and perspiration will be a proportionate debility; whereas the insensible perspiration is a tranquil and imperceptible evacuation, carried on without putting nature to the expense of any corporeal powers. The bad effects arising from the foregoing causes are considerably aggravated by confinement to one situation, probably eighteen hours out of the twenty-four. The pavement of the stall being on an ascent will throw three-fourths of the weight of the body on the hind legs, and will also distress them by the toe being placed upon higher ground than the heel, whereby the ligaments and membranes are kept constantly on the stretch. Under these unfavourable circumstances, the legs swell, a rupture of

GREASE.

the skin eventually takes place, and a serous discharge ensues, which, by exposure to the atmosphere, acquires a fetid and acrimonious quality. As the disease advances, the part affected becomes extremely sore and irritable, so as to give excessive pain to the animal when he moves the limb: at the same time the excoriation spreads, destroys the roots of the hair, and creates a chancrous or pustulous induration of the skin, understood in farriery by the appellation of Grapes." I have been induced to give Mr. Lawrence's explanation at some length, because it appears to possess the merit of being ingenious and original. According to Mr. Feron, grease is often produced by sudden changes from cold to heat. "If," says he, "a colt is taken from grass, and immediately kept in a warm stable after having been used to the severity of the atmosphere, he then gets the disorder. When old horses are troubled with the grease, we shall find that their feet have been exposed first to cold and afterwards to heat, as when they have been in cold water or snow for some time, and on coming into the stable have a large bed of straw, or perhaps hot dung, to stand upon. This sudden transition from cold to heat produces a weakness of the legs, particularly in the skin; when inflammation and cracks, similar to chilblains in the human subject, take place, and are called the Grease in horses." The cause to which Mr. Feron ascribes grease is certainly a very common one, and it cannot be disputed that grease may take place under two very different states of the body, viz. general weakness from excessive exertion, aided by local causes, and plethora from over-feeding and insufficient exercise; and it is probable, that the declivity or slope of the ground on which the horse stands may, by throwing an undue proportion of his weight on the hind legs, contribute to the production of the disease. If a horse, when attacked with grease, is in good or decent condition, has no appearance of weakness, and particularly if the pain and inflammation are considerable, bleeding is certainly proper; and after cleaning the affected parts, a large saturnine poultice (see *Poultice*) should be applied. If the horse is in any degree costive, a mild purgative

GREASE.

should be given ; if not, I would rather advise the use of mild diuretics, in the form either of balls or powders. When the poultice has been properly applied for a few days, the inflammation will generally be lessened considerably, and then some mild astringent lotion may be useful, as a solution of alum, either alone or mixed with white vitriol, or sugar of lead, vinegar, and water. In confirmed or inveterate cases of grease, where the hair about the affected parts stands erect, and the matter which is discharged appears somewhat like dark-coloured or dirty water, and has a peculiar foetid smell ; and when the animal at the same time seems to suffer great pain, suddenly drawing up the leg as if it were seized with spasm when he attempts to move, I have found the following lotion speedily effect a cure, after emollient poultices and fomentations had been tried without affording any relief. I wish to observe, however, that it may be prudent to try the effect of emollient or soothing applications before the lotion is resorted to.

LOTION.

Corrosive sublimate, two drams.

Muriatic acid, four drams.

Water, one pint.

It is the dark-coloured fetid matter above mentioned which produces a peculiar kind of swelling and ulcer by inoculation, and is probably that by which cow-pox is produced. In one experiment, inoculation with this kind of matter proved a preventive of glanders. (See *Glanders and Farcy*, vol. iii. of *White's Farriery*.) Horses of the cart breed are most subject to grease, and particularly black horses with white heels or legs. Trimming out the heels certainly renders a horse more liable to grease than he would otherwise be. Standing in the stable for several days together without exercise will sometimes cause grease ; but in such cases we shall generally find, upon a careful examination, that there is what may be considered a predisposition to the disorder : the horse has been weak and out of condition, the coat has been unhealthy, and the skin rather tight upon the ribs. As grease seldom occurs in a well-managed stable, it is but reasonable to infer, that it is generally pro-

GREASE.

duced either by negligence or improper treatment. Watering a horse at a pond or river, or washing the legs in winter, certainly contribute to its production. Painful ulcers or cracks in the heels are sometimes a consequence of grease: these should at first be poulticed, and afterwards dressed with some astringent. Should fungous excrescences or grapes arise in the heels, they may either be destroyed by means of caustic, or cut off with a knife: the part is afterwards either to be dressed with some mild caustic or escharotic, or seared with a hot iron. The strictest attention to diet, regimen, and cleanliness, must be observed during the whole treatment of grease, and gentle exercise must be persisted in. The best diet on these occasions will be cut grass, clover, lucerne, vetches, or carrots, or sweet hay and bran mashes, with a moderate quantity of corn if the horse appears weak. He should not be tied up in the stall, but stand loose while in the stable, or be turned out in some dry paddock or field during the day, when the weather is favourable. The stable should be kept perfectly clean and well aired, but not too warm. The best mode of preventing grease is to give the horse regular exercise, with a proportionate quantity of good oats and sweet hay; to dress him well; and especially to keep his legs and heels dry and clean, and to avoid the extremes of heat and cold. See *Stable Management*, and *Cracks*.

The following are prescriptions which may be used in cases of grease:—

ALTERATIVE POWDER FOR GREASE.

Take, powdered rosin, levigated antimony, and nitre, of each three ounces.—Mix, and divide into twelve doses: give one twice a day.

ASTRINGENT LOTION.

No. 1.—Take, sugar of lead (super-acetate of lead) and sulphate of zinc, of each one ounce; water, one quart.—Mix.

No. 2.—Sugar of lead and sulphate of copper, of each one ounce; water, one quart.—Mix.

No. 3.—Corrosive sublimate, two drams.
Muriatic acid, half an ounce.
Water, one pint.—Mix.

GRE—GUA

ASTRINGENT OINTMENT FOR CRACKS OR ULCERS IN THE HEELS.

No. 1.—Take, of fresh hogs' lard, four ounces; palm oil, one ounce; best salad oil, half an ounce or an ounce.—Melt by a gentle heat. When beginning to cool, add, oil of origanum, one dram; Goulard's extract, one ounce, by measure.—Continue stirring until it be perfectly cold.

No. 2.—Venice turpentine, one ounce; hogs' lard, two ounces; finely powdered verdigris, two or three drams.—Mix by melting them, and when removed from the fire continue stirring until the mixture be cold.

No. 3.—Yellow basilicum, two ounces.—Melt, and add, oil of turpentine, half an ounce, and finely levigated red precipitate, one to two drams.—Mix.

The farrier-major of the Royal Artillery at Exeter informed me, that the most effectual application he had ever met with was a mixture of finely powdered alum and pipe clay, made into a thin paste, like cream, with water.

SIMPLE OINTMENT.

Best olive oil, four ounces.

Clean bees' wax, half an ounce.

When melted, strain through muslin, and continue stirring until quite cold.

GREASE, MOLTEN. See *Molten-Grease*.

GRIPES. See *Colic*.

GRISTLE. A name commonly given to cartilage. See *Cartilage*.

GROGGINESS. A horse is said to be groggy, when he has a tenderness or stiffness about the feet, from hard trotting upon the road, which causes him to go in an uneasy, hobbling manner, particularly when made to trot gently down a hill, without any support from the bridle. Such horses, however, by means of a sharp bit and spurs, will often trot out with great boldness, and appear quite sound in their feet.

GROUND IVY. The dried leaves are prescribed by Gibson as a pectoral: at present it is seldom, if ever, used.

GUAIACUM. Gum guaiacum is now seldom employed, though a favourite medicine with ancient practitioners,

GUL—GUM.

in farcy and other cutaneous complaints. A decoction of guaiacum wood, with other ingredients, such as sassafras and sarsaparilla, has been prescribed as an alterative drink.

GULLET or ŒSOPHAGUS. A muscular and membranous tube, which conveys the food, &c. from the mouth to the stomach. The upper part of the gullet is large, and like a funnel soon contracts into a tube, which is of an uniform size from the throat to the stomach. This upper funnel-like cavity is named Pharynx. The gullet passes down the neck behind the windpipe, but inclining a little to the left side. It penetrates the chest between the layers of the mediastinum, and continues in a similar direction along the dorsal vertebræ or back bones, passing through an opening in the diaphragm, and terminating in the stomach. The gullet is composed of three coats; an outer cellular one, a muscular, and a cuticular coat. The middle or muscular coat has its fibres so arranged as to facilitate the passage of the food, &c. to the stomach: they are also possessed of considerable strength, which is the more necessary in the horse on account of the length of his throat, and his being obliged, in a state of nature, to swallow food and water in opposition to gravity. The inner or cuticular coat is but loosely connected with the muscular; for as the former has but little elastic power, and the distention of the latter is considerable in the act of swallowing, the cuticular coat is wrinkled into folds during a state of rest, whereby, when the muscular expands, the cuticular coat can open so as to allow the passage of the food, and prevent the too great expansion of the tube. The cuticular coat is continued into the stomach, nearly one half of which it covers.

GUM. The inspissated juice of trees, such as the cherry, plum, and acacia-tree. That produced by the acacia-tree, commonly named Gum Arabic, is the most pure, and is brought to us from Barbary. It is an excellent demulcent, when dissolved in water.

GUM-RESIN. A natural mixture of gum and resin; the inspissated juice of certain plants, shrubs, &c. Of

GUM—HÆM

this kind are ammoniacum, galbanum, asafoetida, gamboge, aloës, &c.

GUMS. The fleshy parts of the sockets for the teeth. See *Mouth*.

GUNSHOT WOUNDS. See *Wounds*.

GUTTA SERENA. A disease of the eye causing blindness. See *Eye, Diseases of*.

H.

HABIT. By this term is meant the disposition or temperament of the body or constitution, whether natural or acquired. Constitutional weakness, or a weakly habit of body, is often hereditary; and therefore, in breeding, it is necessary to choose healthy mares and stallions. The same care is requisite in breeding cattle. The term *habit* is also applied to any vice, such as starting, kicking, rearing, &c.; or any injurious custom, such as crib-biting, rubbing off the halter and getting loose in the stable, pulling the hay from the rack, &c. All bad habits, whether of the body, constitution, temper, or disposition of animals, may be in some degree corrected, if not entirely put a stop to, by proper attention to breaking and breeding.

HACK, or HACKNEY. A general name for road-horses. See *Horse*.

HÆMATURIA. Bleeding from the kidneys; bloody urine. See *Red Water*.

HÆMOPTISIS. Bleeding from the lungs.

HÆMORRHAGE. A flow of blood from any part of the body, in consequence of an artery or vein being wounded or having burst. Hæmorrhage from external injury is most readily stopped by taking up the bleeding vessel and tying it; but when this cannot be done, the bleeding may generally be stopped by pressure, that is, by placing bolsters of linen or tow upon the wound, and binding them firmly down. Preparations named Styptics are sometimes employed for this purpose; most commonly in cases of internal hæmorrhagy. See *Styptics*.

HAI—HAR

HAIR. To promote the reproduction of hair, blisters are sometimes employed, but some weaker application will often be found to answer the purpose better; such as camphorated spermaceti ointment, mercurial ointment, tar ointment, or tar ointment mixed with gunpowder.

HALTER. The rope by which a horse is generally secured in the stable.

HALTER-CAST. Owing to the improper length of the halter, and the horse endeavouring to scratch his head or neck with his hind foot, or by getting the fore leg across the halter, a horse sometimes contrives to injure himself considerably, throw himself down, and sometimes even to kill himself, an instance of which occurred at Canterbury while I was in the Royal Dragoons. Deep wounds are sometimes thus inflicted in the heels or legs, which require at first poultices, and afterwards some astringent or digestive ointment. (See *Grease*.) In severe cases, it may be necessary also to bleed and purge the horse.

HALTING. See *Lameness*.

HAM, of a horse. This is the name given to the muscular part (or *gastrocnemius* muscle) of the hind leg, terminating in the great *tendo Achillis* or hamstring.

HAND. The division in the standard for measuring horses is thus named. A hand is four inches. The French have a standard different from the English. They place the horse under a sort of gallows of a known height. From the upper part of this, a weight of a suitable form is let down through a pulley upon the horse's withers, by a piece of cord or tape, with divisions marked on it of feet and inches, and not hands, as on the English standard.

HARNESS-GALLS. These, as well as saddle-galls, may always be prevented by proper attention. The injured part should be relieved from pressure or friction, and poulticed, fomented, or bathed with some astringent or cooling lotion, as may appear necessary. When the collar or saddle is the cause of the injury, it is commonly occasioned by the stuffing having become hard in some

HAR—HAY

parts, from want of care in the horse-keeper. See *Galls*.

HARRIERS. Hounds that are employed in hunting hares are thus named.

HAW, of the Eye or Winking Membrane; Membrana nictitans. A membranous and cartilaginous body, situated in the inner corner of the horse's eye. In birds this part is wholly membranous, but, in the horse and other quadrupeds, it becomes cartilaginous towards its base. Its use is to wipe off dust or small flies from the eye; for, when the animal draws the eye obliquely inwards, the haw completely covers it. In some morbid states of the eye, the haw is seen constantly covering more or less of the transparent cornea. It was the practice of farriers to cut off the haw on such occasions, a practice that has been strongly reprobated by all modern veterinary writers. It is not improbable, however, that, when the haw is observed to be constantly covering a considerable portion of the transparent cornea, some benefit may be derived from drawing it out with a hook, and snipping off as much as may be necessary with a pair of scissors. See *Eye*.

HAY. Good hay is of a light-green colour, hard and well dried, full of herbage as it is termed, and of an agreeable smell. Such hay is the most wholesome food that can be given to horses when kept in the stable, but bad hay is perhaps the worst, and is dear at any price. The common practice of giving horses as much hay as they will eat, or of paying no attention to the quantity that is given, is productive of much mischief, and may be considered a serious evil. The horse's stomach is naturally small, and his appetite both for food and water very delicate; but, when kept in the stable without exercise for a day or two every now and then, with a rack full of hay before him, he is apt to eat a great deal more than is proper; and, as the want of exercise prevents a due evacuation of excrement, he not only distends his stomach, but his bowels also become loaded. By a continuance of this practice, the functions of the stomach and bowels are at length more or less deranged, their size or capacity is increased, and though an increased

HAY.

capacity of stomach is accompanied with an increased appetite and thirst, there is a loss of the delicacy of taste which the animal possessed when the stomach was in a healthy state. (See *Appetite*.) Some hardy horses go on for many years under such management without suffering materially, while others are, in the course of a year, or even a few months, affected with chronic cough, worms, wheezing, or broken wind. Loading the stomach with hay, and the bowels with excrement, is not only an impediment to breathing, but, by determining too much blood to the brain, the functions of that important organ are in some degree disturbed, and the muscular power and spirit of the animal more or less depressed. It requires only a little reflection to be convinced that much advantage would be experienced by giving horses no more hay than is useful to them. The injury done by bad hay is well known to horse-proprietors; but it is a fact not sufficiently recognized nor attended to, that hay which is made after the seed is formed and become ripe, or nearly so, is not only very deficient in saccharine and mucilaginous juices, but difficult of digestion. It is not so injurious, however, as musty or mouldy hay, or such as is soft and tough from having been soaked with rain. Mow-burnt hay is supposed to be sweet, and, if eaten with moderation, not very unwholesome; but after being chewed a short time, it will be found to possess a considerable degree of acidity; and if its effects on the horse's health be carefully observed, it will often be found hurtful and injurious. New hay, or such as has not been kept a sufficient time in the mow, is difficult of digestion and apt to produce colic or scouring. Hay is in perfection, perhaps, when about one year old, provided the mow be of a good size and well made; but however small the mow, it should not be cut till the spring, or, at the very earliest, till after Christmas. I have seen very good hay from a large well-made mow that was two years old. Some good observations on hay may be found in Gibson, who says that "rye-grass hay is seldom given but in the months of August and September, except to horned cattle. Before Michaelmas it is tolerably hard and dry, especially in dry seasons;

HEART.

and many feed their working horses with it mixed with dry clover; but afterwards it imbibes so much moisture that it becomes unwholesome, and few horses that have been used to good hay will care for it. As for clover, either green or dry, it is extremely surfeiting unless it be given sparingly, though most horses have a good relish to it: when they are suffered to eat it in large quantities, it often produces colic and many fatal disorders, which those farmers who feed most with it often experience among their own horses to their cost." All kinds of hay should be given as fresh as possible from the stack, especially in winter or in wet seasons; for in wet seasons even the best hay will imbibe a great deal of moisture, and soon turn soft and musty in the haylofts. Many horses will not feed well upon it, and when they do, it often proves hurtful to them. Soft hay, of all others, imbibes moisture the easiest and retains it longest, which generally turns it rotten and unwholesome. When the grass has stood long on the ground, as it does in wet seasons, so as to become decayed at the root, such hay always becomes rotten and full of dust, and is more apt than any other to breed worms. Hay is a material article of a horse's diet; and I have found from experience, that few horses turn sick or contract evil distempers in those counties where the hay has been universally good and well made. The daily allowance of hay for a hunter should not exceed eight pounds, a road-horse twelve, and a carriage or waggon horse sixteen.

HEART. The heart is a powerful hollow muscle contained in the chest. From certain parts of it the arteries arise, in others the veins terminate, and it is principally by its alternate contractions and expansions that the circulation of the blood is carried on. The heart is invested with a membranous covering or bag termed Pericardium, vulgarly Heart-bag: they are not in contact with each other, for even in the healthy state there is a small quantity of fluid interposed between them, said to be about one ounce. In dropsical affections, particularly in dropsy of the chest, the quantity of this fluid is considerably increased, and constitutes the dis-

HEART.

ease named Dropsy of the Heart. (See *Bleeding*, where a case of this kind is described.) The heart is divided into two cavities termed ventricles. The left ventricle is smaller than the right, but its sides are much thicker and stronger: it is from this part that the grand trunk of the arteries proceeds; and it is by the contraction of the left ventricle, assisted by that of the arteries, that the blood is propelled and distributed all over the body. The right cavity or ventricle is the receptacle for the blood that has been thus distributed, which is brought back to it by the veins (See *Veins* and *Arteries*), which, like an inverted tree, become larger and less numerous as they approach the grand fountain the heart, near which they form two large trunks, which terminate in a sac attached to the ventricle at its base, and, from its resemblance to an ear, named Auricle. Each ventricle has this kind of appendage, which receives the blood at its entrance, and prevents its rushing into the ventricle with too much violence, by which the regular action of the heart might be interrupted. The small sac or auricle, which is connected with the left side of the heart, receives the blood that has been distributed through the lungs. Where the veins terminate in the auricles, there are valves placed, which open only towards the ventricles, by which the blood is prevented from taking a retrograde course: the same contrivance is found between the auricles and the ventricles, and between the ventricles and the arteries. These valves have their respective names: thus in one part they are called semilunar, from a resemblance to a half moon, and in another mitral, from their similitude to a mitre, and so with the rest. The utility of these valves will be readily conceived, when it is considered, that, without such a contrivance, a contraction of the ventricles would as easily force the blood backward into the auricles, as forwards into its proper vessels. Having given this brief description of the heart, the reader will be enabled to comprehend the manner in which the blood circulates through the body. It may be explained, indeed, in very few words. The blood is brought from every part of the body to the heart by the two *venæ cavæ*, which empty themselves into the

HEART.

right auricle ; and this, when distended with blood, contracts, and forces its contents into the right ventricle, which, contracting in its turn, propels the blood into the pulmonary artery, whose numerous ramifications convey it into the minute branches of the air-cells of the lungs, where, being acted upon by the atmospheric air, it undergoes a change necessary to the production of heat and the support of life, being loaded with oxygen and caloric, and deprived, in a great measure, of its hydrogen and carbon. The blood being now of a florid colour, is called *arterial*. Having passed through the lungs, it proceeds into the left auricle, which, by its contraction, throws it into the left ventricle, and this again collapsing, urges it into the aorta (the largest artery of the body), whence it is impelled through all the arteries of the body, and again returned to the heart by the veins. In passing through the veins, the blood receives a supply of the chyle, or nutrient part of the food, when it arrives near the heart. (See *Chyle*, *Lacteals*, and *Nutrition*.) From the excessive exertions to which horses are frequently urged, and the improper manner in which they are frequently fed, this important organ is sometimes diseased. Inflammation is the disease to which it is most liable ; and it is the disorder by which horses that are knocked up in a severe chase are killed. The symptoms of inflammation of the heart are excessive pain, which causes the horse to groan dreadfully, lie down, and stretch himself out as if he were dying ; quick pulse ; breathing disturbed. It is generally complicated with inflammation of other important organs, especially the kidneys ; which is indicated by the horse frequently endeavouring to stale, and voiding only a small quantity of high-coloured or bloody urine. Nothing but copious bleeding can afford any relief. I have taken off four gallons of blood in the course of an hour in this disorder, and thereby relieved the animal. In cattle that die from being blasted or blown (see *Blasting*), the heart is always found highly inflamed, as well as the lungs, which are gorged with blood. These appearances are also frequently met with in beasts that die of the disorder named Red Water. This was first observed by Dr.

HEE—HEM

Jenner, that illustrious physician to whom the world is so much indebted for his invaluable discovery of vaccination. (See *Red Water*.) Horses that die of inflammation of the lungs are always found to have the heart inflamed also, but sometimes the right ventricle alone is affected. Between the *pericardium* and the heart a considerable quantity of water is sometimes found. This dropsical state of the organ is always a consequence of inflammation, and not unfrequently of pleuritic inflammation of the lungs. It is incurable, but may generally be prevented by copious bleeding. See *Lungs, Inflammation of the*.

HEEL. A term applied both to the back part or termination of the hoof, and the back part of the pastern. Thus we hear of a horse with contracted heels, meaning of the hoofs; and of one with cracks, scratches, or ulcers of the heels, meaning the back of the pasterns.

HELLEBORE. The root of white hellebore is used, both in powder and in decoction, as a remedy for mange and other cutaneous complaints; generally combined with other ingredients, such as sulphur, oil of turpentine, &c. It has been given internally by way of experiment, and found poisonous, even in small doses. I have seen it given, however, to the extent of an ounce, without producing any violent effect; but the trial made of it was sufficient to prove that it is deleterious, and fit only for external use. The root of black hellebore is used on the continent for setons, especially for cattle.

HEMLOCK. *Conium, Cicuta.* A narcotic vegetable. According to Mr. B. Clarke, it has been known to kill horses that through hunger or want of smell have partaken of it. I have given half a pound of green hemlock to an ass, without observing any ill effect from it; and it is said that goats eat it without injury, and even derive nourishment from it. It has been employed in decoction as a fomentation, to which there can be no objection; but, as an internal medicine, I think it may be dismissed from our *Materia Medica*. *Water hemlock* has been described by Linnæus as being very fatal to animals.

HEN—HOC

HENBANE. *Hyoscyamus*. A narcotic plant not employed in veterinary medicine.

HEPATITIS. Inflammation of the liver. See *Liver*.

HERBIVOROUS ANIMALS. Animals that live on herbs.

HERNIA. Rupture. See *Rupture*.

HIDEBOUND. When horses are out of condition, and have harsh dry coats, the skin will generally be found tight about the ribs: they are then said to be hidebound. This tightness of the skin is often the effect of hard work and want of sufficient nourishment; it also commonly attends lingering diseases, and must therefore be considered rather as a symptom of disease than as a disease itself. The best remedies are a light and nourishing diet, as pollard (a better kind of bran than that commonly sold) and oats made into a mash, or malt mashes, carrots, lucerne, or vetches. If the horse's dung smell offensively, it will be proper to begin with a mild purgative. Should there be any want of appetite after the operation of the purgative, tonic medicines are to be given, or a cordial, mixed with two drams of cascarilla bark. The water the horse drinks should be at the summer temperature. By these means, aided by regular exercise, good grooming, and moderately warm clothing, the skin will soon become loose and glossy again.

HIERA PICRA. A mixture of aloës and spices is so named in the old dispensatories. An aloëtic powder is now substituted for this composition, which consists only of two ingredients, aloës and canella; one pound of the former to three ounces of the latter.

HIP-SHOT. This is known by one of the hips or haunches being lower than the other. It generally depends upon a fracture of the *os innominatum*, or small part of the hip bone; which, if the lameness be not considerable, may have occurred at some former period, the fractured part having formed an irregular kind of union, so that the bone on that side is shorter than the other.

HOCK, or HOUGH. The horse's hock is composed of

HON—HOO

six bones, so intimately united as to appear but one. These bones are so connected as to allow of very little motion between them, but that little is useful in preventing jar and concussion. The most important of the hock bones is the astragalus. Its upper and anterior surface resembles a pulley, having remarkable circular ridges with an intermediate circular cavity. This bone and the tibia, or that which rests upon it, are allowed, by this kind of structure, an extensive degree of motion. The *calcaneum*, or *calcis*, or heel bone, forms the projecting part of the hock. Into the upper and back part of this bone, the principal tendon, named *Tendo Achillis*, is inserted. The horse's hock is a part that is much exposed to injury; particularly in horses that are thrown much on their haunches, or are employed much in leaping. Young horses are more liable to injuries in this part than old ones, particularly such as are cat-hammed, or have their hocks inclining inward: hence arise spavins, curbs, &c. The hock is an important joint, affording a considerable mechanical advantage to the muscles of the *tendo Achillis*.

HONEY. Honey is sometimes prescribed as a vehicle for more active medicine, and is an ingredient also in some external applications, such as *Egyptiacum*, now named Liniment of Verdigris, and by some Oxy-mellate of Copper. Linseed tea, sweetened with honey, is sometimes given in coughs; and honey boiled with vinegar forms what is named an Oxy-mel, a medicine also employed in coughs. When the vinegar has had squills steeped in it, the preparation with honey is named Oxy-mel of Squills; and when with colchicum or meadow-saffron, Oxy-mel of Colchicum.

HOOF. The horny insensible covering of the horse's foot. In describing the horse's hoof, it is represented as divided into different parts. All that part which appears as the horse stands on the ground is named the Crust or Wall of the hoof. The lower part of the front is named the Toe; the sides are named the Quarters, and the back part the Heel. All the upper part next the skin is named the Coronet. The bottom of the hoof is formed of the sole, the bars, and the frog or frush. The sole is

HOOF.

composed of a hard dry kind of horn, arranged in scales or plates: the bars are of a similar kind of horn to that of the crust or wall, and, upon a close examination, are found to be a continuation of the crust, bent inwards, and forming an acute angle at the heel, which is seen by inspecting the bottom of the foot. The hoof is admirably suited to the important purpose for which it was designed. It is firm enough to resist the impressions of the hard and often stony ground upon which the horse has to travel, and sufficiently yielding and elastic to admit of a free circulation of blood and nervous power in the sensible parts which it envelops. Were the horse used with moderation, and permitted to arrive at maturity before being brought into work, he would experience scarcely any of those lamenesses by which he is now so often rendered unserviceable at an early period of his life. Having described the crust, the bars, and the sole, the next part to be noticed is the frog, which is of a triangular form, with a cleft or division in its centre.

The frog is composed of a softer and more elastic kind of horn than the other parts; and though apparently a solid mass of horn, from which a great part may be cut away without injury, yet, if we examine it internally, when separated from the living foot, we shall find that it is hollow or concave within, and that those hollow parts are filled by the sensible or living frog. The frog is an important part of the hoof; the division in its centre serves to admit of a certain degree of expansion in the heels; and its elastic quality nicely adapts it to the office it has to perform, which is that of sustaining a portion of the animal's weight. Its situation also is such as to enable it to yield in some degree to the impression of hard bodies, as great part of it projects posteriorly beyond the coffin bone and the great tendon or sinew which passes over the nut bone, and is fixed into the bottom of the coffin bone. We have now to take a view of the internal parts of the hoof; and, for the purpose of illustration, some plates of the hoof may be found in vol. i. of *White's Farriery*. It is far better, however, to get a hoof at the kennel, or

HOOF-BOUND.

separate one from the foot by placing it in a hot dung-heap for a few days, when it may be easily knocked out. All the internal part of the wall or crust, except a sort of groove at the upper part, is covered with thin plates or leaves, something like the under surface of the mushroom. These plates are about five hundred in number, and are supposed to be elastic, yielding in a slight degree to the impulse of the horse's weight, in a direction downward and backward. They are interwoven with similar plates on the surface of the coffin bone, by which a powerful union is formed between the hoof and the coffin bone. These elastic plates are named by Mr. Coleman the *laminæ*, or Laminated Substance of the Hoof, and by Mr. B. Clarke the elastic processes. The groove at the upper part of the hoof receives the coronary ligament or ring. See *Foot*: also vols. i. and iii. of *White's Farriery*.

HOOF-BOUND. This is a consequence of morbid heat or chronic inflammation of the internal or sensible foot. It generally occasions some degree of lameness, and the lameness is often incurable, though capable of alleviation by poulticing the foot now and then, and keeping the bottom of it stopped with cowdung. The hoof-bound foot is smaller and more upright than the healthy foot; and the horny sole is generally very thick, and requires to be pared more than the perfect foot. When a thrush takes place in a foot of this description, it often affords considerable relief; and if the thrush be dried up by astringent applications, the foot again becomes hot and feverish, and the lameness generally returns. It was this circumstance, probably, that induced Mr. Sewel to insert a seton in the frog in such cases; an operation that is said to do much good in chronic lameness arising from contraction and feverish heat of the foot. Another circumstance may have led to this practice. On examining such feet after death, a disease of the coffin joint is often observable, or of the small bone named *navicula*, or nut bone, over which the great tendon passes. Lameness, however, of this kind, is seldom permanently cured. The only chance, I believe, of effecting a radical cure, is to turn the horse

HOO

into some soft meadow-ground, without shoes, for several months. Blistering the pastern is thought to do good; but this I think is doubtful; and, if it does afford relief, it is generally of short duration. If all the above remedies have been found to fail, and the lameness is such as to render the horse unserviceable, the nerve operation should be resorted to. See *Nerving*.

HOOF-CASTING. A partial or complete separation of the horse's hoof from the sensitive foot. (See *Foot*.) This is generally caused by excessive exertion, or by suddenly cooling the feet with water after they have been much heated by exercise. In some instances, I have known inflammatory fevers terminate in inflammation of one or more of the feet. A few years since, I met with a case of this kind, where the inflammation ran so high that the whole of the hind foot became mortified, so that it was necessary to destroy the animal. When the inflammation attacked the foot, the general inflammation or fever ceased. Inflammation of the foot sometimes ends in suppuration, or the formation of matter: in this case there is generally a total casting or separation of the hoof; but it often happens that the sensitive parts retain their power of secreting horn, so that a new hoof is gradually formed. The most usual mode in which the hoof is cast is rather a partial separation. The first appearance is a circular crack or separation all around the coronet: this gradually descends, being pushed forward by the new shoot of horn. At the end of three or four months it goes down nearly to the lower part of the hoof, and then either breaks off, or may be removed with the drawing knife. During this process the fissure between the new and old hoof should be filled with some kind of plaster or wax, so as to prevent gravel or dirt from getting in, and the horse should be kept at grass. When the hoof is cast suddenly and totally, leaving the sensitive foot quite bare, it should be covered with mild digestive ointment spread on tow: the dressing may be confined, and the foot protected, in some measure, by a leather boot.

HOOF, CONTRACTED. This is a very common defect in horses; and though it sometimes takes place under

HOO

the best management, and even in colts that have never been shod, nor taken from a state of nature, it is more commonly the effect of improper treatment. If we cut off the foot of a dead horse, and keep it in a dry but cool airy situation, so that it may not soon become putrid, it will be found to undergo no alteration in its form, though kept a considerable time; but if the contents of the hoof are taken out, which may be done by keeping the foot a few days in hot dung, the hoof will then be found to shrink or contract, particularly if kept in a warm situation or exposed to the sunshine. This contraction will take place principally at the higher part or coronet, and towards the heels; the horn being in these parts most flexible, and containing nothing to oppose the contractile power. At the lower part or bottom of the crust, there may be the same tendency to contraction; but here the horn is much thicker, and the contractile power is strongly opposed by the bottom of the hoof; that is, the frog, the bars, and the sole. If the bottom of the foot is removed, the heels will then contract rapidly, and in two or three days will not only have approached close to each other, but will be bent or curled inward. What then, it may be asked, is it that prevents contraction of the hoof in the living horse; and by what circumstances is the tendency or disposition to contract produced? The hoof, in its healthy state, is pervaded by a fluid, by means of which it is preserved in a flexible and elastic state. If by any means a preternatural degree of heat is excited in the foot, this fluid will be too quickly dissipated, and the supply will be diminished: the horny matter will therefore be disposed to contract or shrink; and the contraction will take place more or less rapidly, according to the degree in which the disposition to contraction exists, and the resistance that is opposed to it. In the perfect foot, or one that has not been mutilated by the smith, the tendency to contraction is powerfully resisted by the bottom of the hoof, consisting, as before observed, of the sole, bars, and frog, as well as by the coffin bone and other parts which it

HOOSE.

encloses, and by which it is completely filled. Unless the contractile disposition be considerable, the resistance thus afforded is often sufficient to prevent contraction; but when the bars are destroyed, the frog mutilated, the shoes made and applied improperly, and the horse made to stand great part of his time on litter, contraction will often take place: for though the internal or sensitive foot forms a strong resisting power, the pressure it sustains causes a gradual absorption to take place, and the contraction will proceed as the resisting medium is thus removed. Various mechanical contrivances have been suggested for the prevention and cure of contraction, which will be described under the heads Shoeing, and Management of the Foot; and the reader may find a more particular explanation of this subject in the author's third volume of *Farriery*.

HOOSE. A term to be found only in the nosology of *cow-doctors*. It signifies a cough, either chronic or acute, with which cattle are affected from exposure to cold winds or rain. The treatment consists in bleeding, if there be any symptoms of fever, as quick pulse, and redness of the under surface of the eyelid, and particularly if the breathing be disturbed; and if the animal be costive, in giving some opening medicine. A moderate degree of warmth, which may be obtained by bringing the animal under cover, and giving warm mashes, is also necessary. In obstinate coughs the following drench may be given; but careful nursing will generally be found sufficient to remove the complaint:

Honey, four ounces.

Vinegar, six ounces.

Mix them over a slow fire, and take off the scum which rises on the surface: add to this four ounces of linseed oil, and give it as a drench twice a day. If the cough be not perceptibly lessened by taking two or three doses, the medicine should be discontinued. Should the owner of the beast not be satisfied in trusting afterwards to nursing, and shelter from the inclemency of the weather, he may try Dr. Clater's curious and potent recipe, the ingredients of which amount to about one pound in

HOR—HUM

weight, beside a quart of warm ale or gruel; and if the latter be used, a wine glass of gin or brandy must be added.

RECIPE.

Balsam of sulphur, two ounces.

Barbadoes tar, one ounce.

The yolks of two eggs.

Ginger,

Anise-seed,

Cummin-seeds,

Elecampane-root,

Grains of paradise, and

liquorice-root,

Salt of tartar, half an ounce.

Honey, four ounces.

} of each, in powder,
one ounce.

HOREHOUND. A bitter vegetable, a decoction of which may be employed as a vehicle for tonic or stomachic medicines. It is said to possess also a diuretic and laxative quality, and was formerly much used in asthmatic and other pulmonary affections. The expressed juice of the plant, or the leaves dried and powdered, may also be employed.

HOVEN, BLOWN, OR BLASTED. See *Blasting*.

HUMORAL PATHOLOGY. That doctrine or explanation of diseases which was taught by the ancients; and according to which, many diseases depended upon the state of the blood and humours. The moderns seem to incline more to that doctrine which supposes disease to depend more upon a morbid action of the solids than an imperfect state of the fluids of the body. It appears, however, a reasonable position, and one perhaps that cannot be easily controverted, that if the blood and humours are in a healthy state and in due quantity, the action of the solids will be healthy also, or, in other words, the various functions of the body will be properly performed; *et vice versô*. In man, the health is influenced in a considerable degree by the state of the mind; and thus, through the agency of the nervous system, grief will destroy the appetite, hinder digestion, render the bowels torpid, impede the functions of the liver, and in time affect the whole body. This is not the

HUMOURS.

case in animals, or only in a very subordinate degree. Quiet docile cattle fatten more readily than others; and cows of a quiet temper are generally better milkers than such as are of a contrary disposition. Fretful, fiery horses are more liable to diseases than such as are temperate: but however quiet or willing a horse may be, in whatever manner he may be fed or kept, still, if he be worked immoderately, he will be liable to many and very serious diseases. Such is the emulative and generous disposition of the horse, that he will even work himself to death when urged by an inconsiderate or cruel master; and especially when kept high and carefully groomed.

HUMOURS. The fluids of the body are thus named; such as the mucous fluids, the serous fluids, the lymph, the chyle, and the blood. These humours may depart more or less from the healthy state, in consequence of improper feeding, or from the suppression of some natural discharge, such as that of the insensible perspiration from the skin. In either case the blood is impure from containing an unusual quantity of excrementitious matter. In the horse, this is determined most easily to the kidneys; and if in such cases the horse be properly fed and carefully groomed, a little mild diuretic medicine, such as small doses of nitre daily, with rosin and levigated antimony, will gradually carry off the impurities of the blood with the urine, and restore it to a healthy state. Such medicines are therefore properly enough termed *Alterative*, or *Sweeteners of the Blood*. When an impure state of the blood is caused by unwholesome feeding, and the proprietor, either from want of ability or inclination to change it, persists in giving such food, but little good can be expected from medicine: it may, however, assist the efforts of nature by keeping up an increased action in the kidneys; or, in other words, by keeping up an increased staling, while good dressing restores the healthy action of the skin. The urine of horses that are badly fed is always very foul and often fetid, unless they happen to drink a great deal of water: their dung also is often foul, offensive, and in large quantity. After a horse has been

HUM—HYD

kept on unwholesome food for a considerable time, and especially if he is worked hard during that time, the whole system will sink into debility, the skin will become mangy, the hind legs will swell and be liable to itching humours, and frequently the lungs will be affected with some degree of asthma, and the bowels with worms. A horse may then be said, with truth, to be foul and full of humours. (See *Feeding, Appetite, and Alteratives.*) Before I conclude this article, I think it necessary to place the subject in another point of view. The value of a horse depends upon his strength and spirit, and whatever tends to diminish these will produce a proportionate diminution in his value. The muscular power and nervous energy are derived from the blood, and can only be in perfection when the blood is in a healthy state. The brain, the stomach, the heart, and indeed every part of the body, are constantly wearing; but as they wear away, new parts are formed from the blood. If this then be imperfect, so will the parts be which are formed from it.

HUMOURS of the Eye. There are three humours in the eye, viz. the aqueous, the chrySTALLINE, and the vitreous humors. See *Eye*.

HYDATID. A thin bladder containing a fluid resembling water and nearly transparent. It is found in all animals and in various parts, and is supposed to be a sort of worm or imperfect animalcule. In sheep it occasions a disease named Gid or Giddiness, the hydatid being found in one of the ventricles of the brain, in the substance of the brain, or in that of the cerebellum. On account of the pressure it makes on the brain, it disturbs the functions of that important organ, especially when the sheep is hurried or driven: he then becomes giddy, turns round and round, and is often blind in one eye. (See *Hydrocephalus.*) At the lower part of the hydatid, or that which appears to be its neck, there are small white bodies about the size of poppy-seeds, which appear to be the germs of young hydatids.

HYDROCELE. Dropsy of the testicle. A disease that rarely occurs in stallions.

HYDROCEPHALUS.

HYDROCEPHALUS. Dropsy of the brain. This disorder sometimes occurs to horses, and produces various symptoms, according to the quantity of water in the cavities of the brain, and the manner in which the animal is fed and worked. It causes a horse to rear up and fall down backwards, and when it happens in the stable, the horse may throw himself down and do himself some serious injury. Occasionally the symptoms are less violent but constant, causing a horse to hang down his head even lower than the manger, refuse his food, and appear to be in considerable pain: he is generally very costive, the eyes are red, but the pulse is sometimes rather slower than usual. Sometimes it causes fits and delirium; the horse endeavouring to force his way through every obstacle which is opposed to him, and generally inclining more to one side than the other. The remedies are bleeding, purging, clysters, blistering the head, and an opening diet. Hydrocephalus is probably brought on by over-feeding, and riding the animal fast when the bowels are loaded with excrement and the brain is surcharged with blood. Horses that are fed beyond their work, or whose work is so irregular, that for two or three days they work hard, and then remain as long in the stable, doing nothing but eat and drink, and that without limit or restraint, may be reasonably supposed to have an excess of blood, as well as a large quantity of dung in the bowels. Is it to be wondered at that under these circumstances there should be an effusion of water in the ventricles of the brain? for this effusion of water is nothing more than an effort of nature to relieve the loaded blood-vessels. There is a disorder to which horses are liable, commonly named *Megrims*, in which the animal sometimes drops down suddenly while at work, and sometimes hangs back, or rears up and falls backward. This probably depends either upon water in the brain, or upon an undue determination of blood to that organ, in consequence of an excess of blood in the body, and the loaded state of the stomach and bowels. Many horses have an inordinate appetite; and it is but seldom that such horses are restrained either in hay or water. Such a horse will perhaps eat thirty

HYDROPHOBIA.

or forty pounds of hay in the course of the day and night, and drink three or four pails of water, each containing three gallons. The quantity of dung and water in the bowels of such a horse will perhaps sometimes amount to a hundred pounds. If this state of the bowels does not produce megrims or hydrocephalus, it is nevertheless a great impediment to the animal's breathing, and often brings on chronic cough, asthma, or broken wind, worms, and other disorders. It also makes the animal sluggish and unwilling to work, by greatly diminishing his muscular power. Old horses, especially such as have been ridden hard, are sometimes subject to a sort of vertigo or giddiness, which attacks them when they are trotted fast for some time, and makes them stop and shake the head, reel, and fall down. If this be not produced by over-feeding and loaded bowels, it is certainly aggravated by it; and when it is found, that although the horse is fed carefully, he is still attacked with such giddiness, the only remedy is to ride him more slowly and to keep him at grass. See *Fits, Lethargy, and Staggers*.

HYDROPHOBIA. Canine madness. *Rabies canina*. As this dreadful disorder is incurable, it is advisable to destroy a dog as soon as he is known to be affected with it. Dr. Muller of Vienna has lately published, in the *Gazette de Santé*, a new mode of treating this disease in the human subject, which was communicated to him by M. Marochetti, a surgeon of Moscow. This surgeon, during his residence at Ukraine, in the year 1813, attended fifteen persons who had been bitten by a mad dog. While he was making the necessary preparations for cauterizing the wounds, some old men requested him to treat the unfortunate people according to the directions of a peasant in the neighbourhood, who had obtained great reputation for the cure of hydrophobia. The peasant gave, to fourteen persons placed under his care, a strong decoction of the tops of the yellow broom (a pound and a half a day): he examined twice a day the under part of the tongue, where he had generally discovered little pimples, containing, as he supposed, the hydrophobic poison. These pimples at length appeared,

HYDROPHOBIA.

and were observed by M. Marochetti himself. As they formed, the peasant opened them, and cauterized the parts with a red-hot needle; after which the patients gargled with the decoction mentioned above. The result of this treatment was, that the fourteen patients returned cured, having drank the decoction only six weeks. The patients were seen again three years after, and were all perfectly well. About five years after, M. Marochetti had an opportunity of giving this treatment another trial. Twenty-six persons who had been bitten by a mad dog were put under his care; viz. nine men, eleven women, and six children: he gave them the decoction of yellow broom; and, upon an attentive examination of their tongues, he discovered pimples in five men, three children, and in all the women. Those who were most wounded were afflicted on the third day; the others on the fifth, seventh, or ninth. One of the women, who had been slightly bitten in the leg, had no appearance of hydrophobia till the twenty-first day. The seven that were free from pimples took the decoction of broom for six weeks, and recovered. Should this statement be found correct, the same treatment, probably, may be usefully applied to animals. M. Magendie has recommended the abstraction of a large quantity of blood, and the injection of tepid water into the veins. According to Mr. Hopkinson, a medical gentleman, who had an opportunity of seeing several cases of canine madness that happened in Earl Fitzwilliam's hounds, the symptom which distinguishes the disorder is in general a loathing of food; although this is not universal, as they will sometimes eat solid food and refuse liquids. In one dog, the first symptom was eating his own excrement when food stood by him: five days after, the dog died raving mad. At the commencement of the disorder, Mr. H. observes, the mad dog has a peculiar tendency, if loose, to lick and smell the penis and fundament of another dog: this, he says, should be looked upon as a very suspicious symptom, and the huntsman considered it as almost a never-failing one. There seem, for the first two or three days, to be intervals of sense; and during that time they usually recognize their master, and the eyes look clear and well;

HYDROTHORAX.

but if the dog is loose at this time, he will in general bite every thing he meets. He will sometimes, during this stage of the disease, leave his home for several hours, spread the disorder by biting men and beasts, and return home again. The mad dog, when confined, seldom survives the fifth day from the first attack: if suffered to run about, his death appears to be hastened. There does not appear to be any dread of water at any period of the disease: a mad dog will often lap milk or water, and has been seen to swim a large river; but he is generally incapable of swallowing in the advanced stage of the complaint. It is a common opinion, that when a dog is bitten, a few weeks' confinement, sea-bathing, or the popular nostrums, are sufficient to prevent his taking the disease and spreading its mischievous effects; but in the case of Lord Fitzwilliam's hounds, it was proved that there is no security after six months. According to Mr. Meynell, an unusual disposition to quarrel with other dogs is a certain sign of beginning madness. No remedy has hitherto been discovered for this disease, and the only effectual mode of prevention is to cut out the bitten part. Mr. Daniel considers worming a useful operation, and thinks, if a dog becomes mad afterwards, he is incapable of biting.

HYDROTHORAX. Dropsy of the chest. This disease in the horse is almost always a consequence of inflammation of the lungs, and it is probable that it would never happen, were the inflammation from which it originates treated with sufficient promptitude and energy. The disorder sometimes occurs in consequence of a dropsical state of the system, brought on generally by keeping a horse in cold, wet situations. In this case it is accompanied with dropsical swelling of the chest, sheath, and belly, and sometimes of the hind legs also, and attended with a considerable degree of general debility. A respectable farrier of Panborough, near Wells, informed me that this kind of dropsy often happened in his neighbourhood before the Moor was enclosed, that it was named the *moor evil*, and that the following drench was found an excellent remedy for it. Boil a handful of wormwood in a gallon of ale, skimming off the froth, until it comes to a

HYO—IDI

quart; then strain it off, and steep in the strained liquor one ounce of long pepper and one ounce of grains of paradise, and slice into it one ounce of Castile soap. Give this to the horse fasting, and immediately after ride him about until he sweats. Then lead him into the stable, and take proper care of him. As there is considerable trouble and expense in preparing this drench, the following may possibly be found a good substitute for it.

Take, of Powdered caraway-seeds, one ounce.

Powdered allspice, two drams.

Powdered ginger, one dram.

Venice turpentine and Castile soap, of each half an ounce.

Warm ale, one pint.

Rub the Venice turpentine and soap in a mortar, with some of the warm ale gradually added to it, and then mix the whole together for one drench, which may be repeated two or three times if necessary. The horse should be turned into a good piece of grass when sufficiently recovered; but if the season be unfit for pasturing, he should be kept in a moderately warm stable, be fed carefully, and have regular exercise.

HYOSCYAMUS. Henbane. A poisonous, narcotic vegetable, seldom used in veterinary medicine. It is recommended, however, by Bourgelat, in his *Matière Médicale Raisonnée*, in the form of a fomentation or cataplasm to very painful wounds, such as those of the foot, the tendons, and joints.

HYPERICUM. St. John's wort, a plant sometimes prescribed by old farriers, but rarely employed by modern practitioners.

HYSSOP. An infusion of hyssop sweetened with honey has been recommended in obstinate coughs.

I.

ICHOR. A thin acrimonious discharge from ulcers or diseased parts, sometimes tinged with blood.

ICTERUS. Jaundice or Yellows. See *Jaundice*.

IDIOSYNCRASY. A peculiarity of constitution or temperament.

ILE—IMM

ILEUM. The last portion of the small intestines. It terminates in the large intestine, named Cæcum, or Blind Gut. See *Intestines*.

ILIAE REGION. The side of the abdomen, between the ribs and the hip.

ILIUM. The haunch bone.

IMMOBILITY. The French veterinary writers describe a disease under the name of *Immobilité*, which appears to bear some resemblance to the disease of the human body, named Catalepsy. Lafosse, in his *Dictionnaire d'Hippiatrique*, expresses his surprise that no veterinary writer before his time should have noticed this disease, which he says is well known to horse-dealers, and considered by them as unsoundness. "A horse thus affected," he says, "cannot be made to back, or, if he does so, it is with great difficulty. He remains in the position in which he is placed; that is, if he is moved forward, and then suffered to stand still, he remains exactly in the position he is left in: if the head is elevated, it continues immovable in that situation."

The disorder is caused by fear, or is the consequence of a long-continued illness, especially after recovery from locked jaw, convulsions, or epilepsy. The disease is incurable. The younger Lafosse, in his *Manuel d'Hippiatrique*, speaks of it as a consequence of vertigo, by which, probably, he means the disease named by English farriers *megrims*. He also considers it as an incurable disorder, and advises that the horse be turned to grass.

Lafosse is mistaken in supposing that this disorder has not been noticed by any veterinary writer except himself; for a disease which seems to correspond with it is described in Markham's *Masterpiece*, the eleventh edition of which was published in the year 1675, or about one hundred and fifty years ago. He says, "Those horses are supposed to be *taken*, or, as some call it, *planet-struck*, that are deprived of feeling or moving, not being able to stir any member, but remain in the same form as they were at the time of *taking*." From what follows, it appears that the disorder was noticed also by earlier writers, both English and French.

IMP—INC

“Other ancient farriers hold it cometh of extreme cold. Now, for the French writers, as Monsieur Horace and the rest, who call it *surprius* (surpris), they hold it cometh only from cold causes.” In the sixth volume of *Instructions et Observations sur les Maladies des Animaux domestiques*, par M. M. Chabert, Flandrin et Huzard, 2d edition, 1806, page 198, there is a long account of this disorder, by M. Chabert, in which it is said that Lafosse is the first writer that described it. I have never seen a disease that corresponds with the description of Markham, Lafosse, or Chabert, nor has any modern veterinary writer described such a disorder. The only diseases that seem to bear a distant resemblance to it are the stag-evil (mal de cerf of Solleysell), and the cramp, or convulsions, of Gibson, who says, “It almost always seizes suddenly, and without any previous symptoms. As soon as the horse is seized in this manner, his head is raised with his nose towards the rack, his ears pricked up, and his tail cocked, looking with eagerness as a hungry horse when hay is put down to him. Other symptoms come on apace: his neck grows stiff, cramped, and almost immovable, and all the muscles before and behind will be so much pulled and cramped, and so stretched, that he looks as if he was nailed to the pavement.” This description accords more with locked jaw than catalepsy. Gibson observes that the most usual cause of this disorder is *botts* in the stomach. See *Catalepsy*.

IMPOSTHUME. A collection of matter or pus in any part. See *Abscess*, *Inflammation*, and *Suppuration*.

INCONTINENCE OF URINE. A continual dropping of urine from the horse's sheath, in consequence of a weakened state of the neck of the bladder, and of the bladder itself. This disorder is brought on by not giving a horse an opportunity of staling when he has occasion to void his urine, which, collecting in great quantity, puts the muscular fibres of the bladder on the stretch, and thereby weakens them. The best remedy, probably, is to turn the horse to grass; but, if this be not convenient, let him be kept loose in a box, on green food, or a moderate quantity of hay and water, and some bran

INDIGESTION.

mashes, or a mixture of bran and oats. The only medicine likely to do good, should any be found necessary, is some preparation of iron ; and, if that alone fail, some tincture of cantharides may be given with it.

TONIC DRINK FOR INCONTINENCE OF URINE.

Take, Tincture of muriate of iron, and
Tincture of cantharides, of each from two
to four drams.

Good ale or beer, half a pint.

To be given morning and evening.

TONIC BALL FOR DITTO.

Take, of Sulphate of iron, one dram.

Carbonate of soda, two drams.

Powdered myrrh and ginger, each one
dram.

Powdered cantharides, six grains.

Powdered caraway-seeds, half an ounce.

Treacle, enough to form the ball.

To be given daily.

INDIGESTION. This is a complaint that often happens both to horses and cattle. In the former it is commonly named Flatulent Colic, Gripes, Fret, and, in some places, the Botts or Butts. In cattle it is named Blasting, Hoven, Blown, and Gorged. Under these several heads, some observations have been made on indigestion ; but much remains to be said on the subject in this place, as it is one of considerable importance. There is a distinction to be made between the acute indigestion of horses and that of cattle. In the former, it is more properly named indigestion, than in cattle ; because in horses it arises from a suspension of the digestive process, through a direct impression upon the nervous structure of the stomach ; whereas in cattle the sensitive or digesting stomach (that is, the fourth) is not affected. In these, the disorder is caused by the animal eating greedily of some food to which it has been unaccustomed ; such as clover, lucerne, vetches, &c. When cattle are put suddenly into pasture of this kind, or have an improper quantity given them in a crib, they fill the first stomach or rumen (commonly named the *paunch* or *belly*) to such a degree that they are incapable of throwing it

INDIGESTION.

up for rumination. Such a load of green food, lying together in a warm situation, soon ferments, and thus a great deal of air is generated, which so distends the paunch, that, unless the animal be quickly relieved, it will put a stop to respiration, and to the circulation of the blood, and death from suffocation will ensue. Hence it is, that when cattle die of this complaint, we always find the heart and lungs highly inflamed and gorged with blood. The remedy most approved of is that proposed by Dr. Monro; namely, thrusting a flexible tube down the throat and into the paunch, through which the air rushes out, and instant relief is afforded. When this has been accomplished, a cordial drench should be given, to excite the fourth or sensitive stomach to increased action: the temporary energy thus acquired by the fourth stomach is imparted, in a certain degree, to the paunch, and enables it to throw up gradually the fermenting food for rumination, which should be taken out of the animal's mouth, as much as can be, so soon as it is thrown up. Whether the fermentation take place in the food, merely from its lying in a warm situation, or whether it depend more upon a depression of nervous power in the fourth stomach, in consequence of a load in the paunch, it is not easy perhaps to determine. Those who view it in the former light would probably be satisfied with letting out the air, as I have described, and taking off a large quantity of blood to relieve the heart and lungs. If the instrument for evacuating the confined air cannot be obtained, the old operation termed *paunching* must be resorted to. (See *Blasting*.) The symptoms of this complaint in cattle are sometimes so urgent, that the most prompt and effectual measures are absolutely necessary to save the animal's life; and paunching may sometimes be performed in preference to the introduction of the flexible tube, on account of the greater ease and expedition with which it may be done. The wound that is made in the paunch is not dangerous, but in healing always adheres to the flank; and this is perhaps ever after some impediment to easy rumination, and probably to digestion also. Indigestion sometimes occurs in a less formidable

INDIGESTION.

degree, especially when cattle are fed in a stall or from a crib; and in such cases it is probable that the third and fourth stomach are affected, as well as the paunch: such cases therefore require some cordial or stimulating medicine joined with a purgative, and clysters of salt and water. Bleeding is likewise necessary in these cases, for the purpose of relieving the heart and lungs; and it is proper, after bleeding, drenching, and giving a clyster, to make the animal walk about a little. The following drench will be found to answer the purpose:—Take, of Barbadoes aloës, four drams; ginger, two drams; common salt, four ounces; water, one quart; tincture of opium, half an ounce to an ounce, or a wine-glassful; that is, two or three ounces of the anodyne carminative tincture. (See *Colic*.) This last preparation of opium is preferable, I think, to the tincture of opium or laudanum. I am inclined to think that potatoes are more liable to blast cattle than other food, when given too freely; but all food that cattle are fond of, and eat with avidity, is capable of producing the same effect. It may be said, by persons of very limited experience, that they have given potatoes to cattle, without paying any attention to the quantity given, and as many at a time as they choose to eat, without doing them any injury; and they may say the same of the Swedish turnip or mangel-wurzel. But it should be recollected, that many cows have only moderate appetites, and will not eat more than is proper, while others are always craving, and will, if permitted, devour a great deal too much. The injurious effects of immoderate feeding are not observable for some time, but by a continuance of such feeding the whole digestive system becomes weakened, and then, upon eating a little more than usual, indigestion or blasting may take place. If we consider the paunch as a muscular cavity, lined with a cuticular membrane to defend it from the coarse or imperfectly masticated food it is destined to receive, it will appear but reasonable that, by frequent distention, it should become gradually weakened, and less capable of performing its office. It must then be admitted that much advantage may be derived from paying greater attention to the appetites of cattle, when fed in a *barton* or

INDIGESTION.

stall, than is usually bestowed upon them; and if they are observed to eat or drink immoderately, by restraining them in their food and water it is probable that the appetite will gradually become natural, and digestion more perfect. I have been informed by an experienced farmer, whose knowledge of the subject has been proved by the result of his practice, that if sheep are turned into vetches or clover when the wind is in the east, it is almost sure to blast them; for then the leaf of the plant is withered and hangs down. "I have always found it better," said he, "to turn either sheep or cattle into vetches or clover when it is a little wet with dew or rain. They are sure to eat voraciously whenever they are turned into them; and if the leaf is at all withered, it, being in smaller compass, they get a greater quantity of food into their stomachs, which, as soon as it becomes moistened in the stomach by drinking, ferments and generates wind, which, unless it passes off soon, occasions death. I have had forty sheep at a time hoven or blasted from feeding on vetches, and so swollen that I hardly knew which would drop first. My usual remedy was to hurn down about a quart of water to each sheep, which generally had the desired effect, though many died before it could be given. I now recommend, when sheep are first turned into vetches or clover, to keep them in only eight or ten minutes, and then take them off for about half an hour: they should then be put on again for eight or ten minutes, and, after an interval of half an hour, they may be put in for good." This disorder, like many others, may be easily avoided by not turning animals too hastily into vetches, clover, or other luxuriant pasture, or into rank coarse grass; and, in stall-feeding, by giving only a moderate quantity of food at a time, especially to such as have inordinate appetites, with a sufficient quantity of *wholesome* water, instead of stagnant pond water, which is always more or less impregnated with the animal's excrement. M. Volpi, one of the professors of the veterinary college at Milan, in his *Treatise on Veterinary Medicine*, published in Italian in 1813, in speaking of indigestion in cattle, takes no notice of Dr. Monro's instrument for letting off the confined air, but recommends

INDIGESTION.

a drench composed of nitre, and an infusion of chamomile and elder flowers. He says that the animal should be walked about for some time, and if he hangs down his head, or appears heavy, he should be bled. Sometimes, he adds, it is necessary to paunch them. He has known a horse that was given over, and supposed to be near death, from indigestion (flatulent colic), cured by giving twenty-four ounces of brandy in a quart of peppermint water at two doses. This is a powerful drench, and, though it cured the disease, must have done considerable injury to the stomach. (See *Colic*.) Indigestion, both in horses and cattle, may be divided into *acute* and *chronic* indigestion. The former we have already considered; the latter implies a weakened state of the stomach and other organs subservient to digestion, gradually induced by improper feeding, but generally hastened by immoderate work and checked perspiration. In horses, the stomach is sometimes injured by botts; and such a degree of morbid susceptibility has been occasioned in the stomach by these worms, that medicine which would, under other circumstances, have been innocent, has proved fatal. Mr. James Clark relates two instances of a horse dying soon after taking a drench which in a healthy stomach would have been innocent. In the stomach of one horse, the botts had eaten an opening through its coats. I am strongly inclined to suspect, that when botts have quitted the stomach, as they always do in the spring of the year, the effects of their sojourn in that important organ not unfrequently remain for a considerable period; sometimes during the animal's life. The morbid condition brought on by these worms is manifested by an imperfect digestion, and a liability to be hurt by causes which otherwise would have been harmless. A tendency to flatulent colic, cough, vitiated appetite, cutaneous disorders, &c. is thus induced. (See *Botts*.) Another cause of chronic indigestion, and by far the most common one, is the almost general practice of giving horses as much hay as they will eat. Young horses, and especially those that stay a great deal in the stable, and are allowed to drink freely, will gradually enlarge their stomachs, by im-

INDIGESTION.

derate feeding, to twice or three times the natural and healthy size. This increased capacity of the stomach is generally attended with a craving appetite and thirst, and a want of that delicacy of taste which the animal naturally possesses. A young horse of a good constitution may go on in this way for years, if he is not worked immoderately or otherwise ill used; but when to this mode of feeding hard work is added, and frequent exposure to wet and cold after being heated and fatigued by exercise, the whole muscular and nervous system falls into a state of permanent debility, and various diseases are the consequence of such a state of body. In concluding this article, I must beg leave to recall the reader's attention to the motto prefixed to this and to the other volumes I have published: "*Venienti occurrere morbo.*" It is easy to prevent both the acute and chronic indigestion, but often very difficult to cure them; and, when cured, it is only by attention to preventive measures that their recurrence can be obviated. The strong stimulants often employed for the cure of acute indigestion in horses, though they relieve the animal for the time, do more or less injury to the stomach, especially large doses of oil of turpentine and æther, which I have, in one instance, known even to prove fatal. (See *Worms, Æther, and Turpentine.*) If tonics do good in chronic indigestion, it is only when assisted by proper attention to feeding, exercise, and grooming; and without a continuance of such attention their effect is never permanent. Indigestion often happens to young calves before they are weaned, especially when taken from the cow and brought up by hand. In these young animals it generally causes scouring, and sometimes costiveness, with griping pain and convulsions. All this depends upon some error in feeding, most commonly by loading the stomach too much, with a view to fatten them expeditiously, but sometimes by giving improper food, as milk that is not sufficiently fresh. When calves are thus affected, there is generally, perhaps always, a morbid degree of acidity in the stomach, to correct which some carbonate of soda or potash should be given, with a little Glauber's or Epsom salt, and two or three table-spoon-

INDIGESTION.

fuls. of gin or brandy ; but if griped or convulsed, a table-spoonful of the anodyne carminative tincture (see *Colic*), or a tea-spoonful of tincture of opium, should be given. When neither of the above salts are at hand, a table-spoonful of common salt may be substituted for them. Many dairymen give half a pint of urine, with a little brandy or gin. See *Calves*.

DRENCH FOR INDIGESTION IN CALVES.

Epsom or Glauber's salt, three or four ounces.

Carbonate of soda, two drams.

Ginger, half a dram.

Water, ten or twelve ounces.

Brandy or gin, two table-spoonfuls; or anodyne carminative tincture, one table-spoonful.

Pigs appear to be less liable to indigestion than other domestic animals, but, upon a careful inquiry into the subject, it will be found, that even these animals often suffer, and even die, in consequence of improper feeding. Their disorders are generally of an inflammatory nature, and require bleeding and purging. It is a difficult matter to administer drenches to pigs, or to bleed them sufficiently. Some levigated antimony (about one dram) may be given in their food twice a day for a few days, and they may be bled by cutting off part of the tail or the ears, or by paring the bottom of the claw towards the toe. Turning them into a field is a good general remedy, when they are observed to be sickly or off their feed ; and, when this cannot be done, abstinence will probably soon bring them round again. The cutaneous disorders of pigs, such as measles, require cleanliness, as well as bleeding and purging ; and, in these cases also, a run in a paddock is an excellent remedy. Many pigs have been blasted, and have died in consequence, by feeding greedily on sweet whey, which is apt to ferment in their stomachs. Whey that is a little sour does not appear to injure them. Turkeys and other poultry sometimes gorge themselves, and may be relieved, when the symptoms are urgent, by opening the crop and taking out the food. The wound is afterwards to be stitched up. I have known a turkey saved by this operation, and recover perfectly. He was gorged by feeding on pease.

INF

INFECTION. This term implies some effluvia or invisible vapours, by which a disease is communicated from a sick to a healthy animal. It is different from contagion, which means the communication of a disease by contact or touching, or applying morbid matter to the body of a healthy animal. Influenza, or distemper, is a disorder of the former kind, and glanders one of the latter.

INFLAMMATION. Inflammation is either general or local, external or internal. General inflammation or inflammatory fever may be brought on either by pampering an animal with nutritious food, or by a suppression of some natural evacuation or discharge, and especially that which is constantly going on from the skin. In either case some one of the vital organs is generally affected more than the rest. In suppressed perspiration, the mucous membrane of the nose, windpipe, and lungs, is generally affected. When general inflammation or fever takes place from too much blood being formed, the heart or brain is often the seat of the disorder; and in young animals, yearling cattle for instance, such attacks quickly end in death. (See *Quarter Evil*.) Thus we see that, when the disease is caused by a suppression of perspiration, the excrementitious matter which ought to have been thus discharged is determined to some other outlet, as the mucous membrane of the lungs, and sometimes that of the bowels also. It sometimes happens, however, that the kidneys, which, next to the skin, are the most considerable emunctory of the body, take on an increased action, and afford an outlet to excrementitious matter with greater facility and with less disturbance to the system than the mucous surfaces. Practitioners avail themselves of this property of the kidneys, by giving small doses of some diuretic medicine once or twice a day, by which the morbid matter is determined to those emunctories, and the mucous surface of the lungs thereby relieved. In the human body, the medical practitioner endeavours to carry off the morbid matter by the skin, by means of sudorific or diaphoretic medicines, knowing that to be the most ready outlet; but in horses and cattle the kidneys are the best channel for it. The mucous membrane of the respiratory passages

INFLAMMATION.

(that is to say, of the nostrils, windpipe, and lungs, and especially certain parts of those passages) is plentifully supplied with nerves and blood-vessels, and therefore possessed of great sensibility; so that, when much of this excrementitious matter is determined to those parts, it causes inflammation: and this is also the case with the mucous surface of the bowels. In the treatment of these disorders, therefore, the first thing to be done is to lessen the quantity of blood by bleeding; secondly, to dilute that which remains by bran water or water alone, and to divert the morbid matter from the lungs, or from the bowels, by keeping up an increased discharge of urine, by means of small doses of nitre once or twice a day, or a mixture of nitre and rosin, and to bring the skin to a healthy state by good grooming. Practitioners generally give some antimonial preparation for this purpose, such as emetic tartar or antimonial powder; but these generally, if not always, act upon a horse's kidneys. It must be obvious, that when an animal is labouring under general inflammation or fever, in consequence of a suppression of the natural discharges, whether it be perspiration, urine, or dung, he cannot be cured merely by the abstraction of blood; for, however large the quantity abstracted, that which remains will be impure or acrimonious, and unfit for carrying on a healthy action. It is absolutely necessary to restore the natural discharges by means of suitable medicines, unless that be effected by an effort of nature, which is not an uncommon occurrence, especially when the animal is supplied with some bland fluid, such as bran water or thin bran mashes, and some vetches, lucerne, or other green food. The morbid matter sometimes runs off by the nostrils, sometimes by the kidneys or bowels, and sometimes by a general relaxation of the skin, and the body is thus restored to health. Considerable weakness generally remains, and great care is necessary in feeding the animal; for, though the appetite and digestive power soon return, the nervous system continues in a weak state for some time, and can bear only a moderate quantity of blood. The most safe and effectual method of restoring the animal's strength in every respect, is to turn him

INFLAMMATION

into a sheltered field, and if there is not sufficient grass, to give him a moderate quantity of the best hay. Nothing contributes more to the recovery of strength than the open air and voluntary exercise; but when a field cannot be had for the purpose, he should be turned into a large airy box, have some green food or bran mash, and be led out once or twice a day. The fevers of horses are most commonly produced by over-exertion or immoderate work, and a consequent exhaustion of the nervous energy of the body, but may also be brought on by gentle work, when a horse is in a weakly state, or has just been attacked by some disorder; for a horse's labour should always be suited to his strength: when ill, he is unfit for any work at all. I have known many dangerous and even fatal inflammatory fevers produced by working a horse beyond his strength, or at a time when he has been attacked by indisposition. In such cases the nervous system is so depressed, or, in other words, nature is so exhausted, that however proper the treatment may be, it is frequently ineffectual: should the animal recover, a long run at grass is necessary to restore his strength. These cases are generally accompanied by great redness of the conjunctive membrane of the eye, heaviness or stupor, and considerable weakness, especially of the hind parts, when led out of the stable. Bleeding is essentially necessary in these disorders, but a perfect recovery must not be expected without a long run at grass; and if the weather be at all favourable, the sooner the horse is turned out the better. Inflammatory disorders or fevers are sometimes produced by want of exercise and over-feeding; and the symptoms of such fevers are somewhat diversified, being dependent on the animal's age, the state of the nervous system, and the quality of the blood. Young vigorous horses, that have not been injured by immoderate work or a continuance of improper feeding, possess considerable nervous energy and rich, pure blood; therefore, when attacked by inflammation, it is of the greatest importance to bleed early and copiously, and afterwards to restrict them to an abstemious diet, with moderate exercise. Such horses recover their strength quickly; but, unless they be freely

INFLAMMATION.

bled at an early period of the disorder, it often terminates fatally. Old horses that have acquired a habit of eating a great deal of hay and drinking largely, thereby weakening the stomach and bowels, are more or less deficient in nervous energy, especially if they have been hard worked; and, in consequence of the digestive function being impaired, the blood is more or less impure. When horses of this kind are attacked by inflammatory fever, though bleeding is essential, they cannot bear the loss of so much blood as young and vigorous horses, and their recovery is much slower. The bowels of such horses are generally loaded with excrement, and require to be emptied by clysters, which, with bleeding and a run at grass, will generally accomplish a cure. In severe attacks of inflammation of the lungs, and especially when they have not sufficient strength to bear the loss of any more blood, blistering the sides is of great use. If a run at grass cannot be allowed, they must be put into an airy box, be led out once or twice a day, and have a little nitre in their mashes. Inflammatory fever is sometimes a consequence of local injuries, especially wounds of joints or tendons, and extensive lacerated wounds, severe bruises, and deep punctures of the foot. Here bleeding is the chief remedy, but the injured part should be the principal object of attention. Every means should be employed to assuage the pain of the wound, and all irritating applications and operations carefully avoided. Decoctions of poppy-heads, or some of the narcotic plants, such as hemlock, henbane, &c. should be used as fomentations; and if the part be so situated as to admit of it, an emollient poultice should be applied. This treatment should be continued until the pain and inflammation have subsided, and the wound discharges white healthy matter. (See *Wounds*.) Another cause of inflammatory fever is the absorption of poisonous matter into the system, such as that of farcy or glanders: bites or stings of venomous animals or insects may likewise induce it. (See *Farcy, Glanders, Bites, and Stings*.) External inflammation is a subject of considerable interest with regard to horses, and embraces several important diseases, such as strains, wounds, bruises, lameness, ophthalmia,

INFLUENZA.

&c., which see. Adhesive inflammation is that which is necessary to the adhesion of the sides of a wound. Inflammation has several modes of termination, the most desirable of which is resolution: by this the gradual subsidence or disappearance of the disease is effected. The second mode is by effusion, either of lymph or serum: upon this depends the callous swelling that often remains after the inflammation has ceased, which consists of hardened lymph; as in strains of the back, sinews, &c. Dropsy of the chest or abdomen is caused by an effusion of serum into these cavities. The third termination is in suppuration, or the formation of matter; and the fourth is gangrene, or mortification. Particular inflammations are noticed under the names of the parts which they affect. See *Lungs, Liver, &c.*

INFLUENZA. Distemper. Epidemic catarrh. Catarrhs, or violent colds, attended with sore throat and fever, are sometimes very prevalent among horses; so much so, that they appear to be infectious, seldom making their appearance in a stable without attacking every horse kept in it, even if only for a short time. Catarrh often spreads through a village, a town, or a whole country, and sometimes destroys a great number of horses. Young horses appear to suffer more than old ones, especially such as are kept in hot stables and are fed high. I am inclined to think that young horses that have not gone through the strangles have the disorder in a more severe degree than others. The symptoms are cough, dull watery eyes, want of appetite, heaviness or hanging of the head, difficulty of swallowing, weakness, a discharge of matter from the nostrils, and sometimes quick breathing. Copious bleeding at the commencement of the disorder is of the greatest importance. Empty the bowels by clysters, give bran tea, and encourage the discharge from the nostrils by steaming the head. If the throat be so sore as to cause pain and difficulty in swallowing, apply some blistering ointment or liniment, or rub in some hartshorn and oil about the throat. If there be quickness of breathing, blister the sides, and give a little nitre, or nitre and antimonial powder, once or twice a day. When the weather is favourable, if the horse be

INFUSION.

turned into a sheltered field, medicine will often be unnecessary; but where this cannot be done, a loose box is the best situation for him, and a little grass, vetches, or lucerne, the best food and medicine. When horses labouring under this disorder are kept in a warm stable, and drenched with rich gruel, or fed improperly, they often become unexpectedly and suddenly worse, at a time when they appear to be recovering and almost convalescent. In this case they should immediately be bled freely, and afterwards fed with great care. I am inclined to believe, that if a horse, when attacked with this disorder, were largely bled, clystered, and afterwards turned into a sheltered field, he would recover more quickly than under any other mode of treatment. Influenza is a disorder whose intensity varies considerably, being sometimes attended with a high degree of inflammatory fever, and quickly followed by great debility; at others slight, and easily cured by bleeding, a little nitre, and a few mashies. This difference depends greatly, if not wholly, upon the state of the horse, and the situation he is kept in, and should lead us to reflect upon the advantages that may be derived from properly ventilated stables and judicious feeding, with regular and moderate exercise. Distempers have often prevailed among cattle, especially on the continent; and in France laws have been enacted to prevent the spreading of such disorders. The *epidemic*, or more properly the *epizootic*, diseases of cattle, are rather of a different character from the distemper of horses, though it appears, from the description given of them by some French veterinary writers, that they are an affection of the lungs. There is a good account of this disorder in a memoir by Huzard, in which he names it "Chronic Peripneumony, or Pulmonary Phthisis." The remedies are early bleeding, emollient and acidulated fumigations, and simple oxymel, with infusion of some bitter plants, as a drench. (See *Catarrh* and *Lungs*.)

INFUSION. Infusions are made by steeping herbs, roots, or other medicinal substances, in boiling water. Infusions of mint, peppermint, pennyroyal, chamomile, wormwood, or any other aromatic herb or shrub, are

INJ—INT

useful cordials for cattle, and may be made palatable to the animal by the addition of a little sugar or treacle.

INJECTION. A term sometimes applied to clysters. (See *Clysters*.) It is used also to denote any medicine that is *injected* into the vagina or urethra, and those compositions which are employed in making anatomical preparations of the blood-vessels.

INOCULATION. An operation used for communicating a disease, such as the small-pox. Glanders is sometimes communicated in this manner accidentally, by means of the currycomb, scissors, or splinters in the manger. (See *Glanders*.) It was proposed some years ago, by Mr. Prosser, to communicate strangles in this way, for the purpose of producing that disease in a mild form.

INOSCULATION. The running of arteries and veins into one another, or the inter-union of the extremities of arteries and veins.

INSPIRATION. The act of drawing air into the lungs. See *Respiration*.

INTEGUMENT. Any common covering of the body, whether skin, muscle, or membranes.

INTERCOSTAL. A term given to parts situated between the ribs: thus we have intercostal muscles, &c.

INTERFERING. See *Cutting*.

INTERMITTENT. A name given to disorders that appear to go off at certain periods, and return after some interval.

INTESTINES, or BOWELS. A membranous tube or canal, extending from the stomach to the fundament. They are usually divided into small and large. In the horse, the small intestines are not much larger than those of the human body, but the large intestines are of an immense size. This canal is connected through its whole extent by membranes, termed Mesentery and Mesocolon. The whole length of the intestines is about thirty yards; but they are so convoluted, as to have the appearance of distinct parts. The intestines are composed, in a great measure, of muscular fibres, some of which run in a circular and others in a longitudinal direction. When the circular fibres contract,

INTESTINES.

the diameter of the canal is diminished ; and when the longitudinal fibres are in action, the canal is shortened ; and by the combined action of these fibres the food is gradually propelled through the whole length of the canal. This motion of the intestines is termed peristaltic, and may be distinctly seen in an animal recently killed. The internal surface of the intestines consists of a nervous and vascular membrane, which is constantly forming a mucous substance for its own protection. In some diseases this mucous secretion is so abundant, as to be discharged in considerable quantity with the dung : it is at the same time generally thicker and of a lighter colour than natural, having some resemblance to fat or grease. (See *Molten-Grease*.) The external surface of the intestines consists of peritoneum, a membrane from which all the organs of the abdomen derive their external coat. The peritoneum forms also a kind of sac, in which they are all enclosed. The small and large intestines have each three different names applied by anatomists to certain portions of them. That part which proceeds from the stomach, to the extent of about twenty inches, is called Duodenum : at its beginning, or about four or five inches from the stomach, the biliary and pancreatic duct enter. The next portion of intestine is named Jejunum, from being generally found empty ; and the third part is termed Ileum. The termination of this bowel in the Cæcum, or first of the large intestines, has something peculiar in its structure : there is a looseness of the internal coat at this part, which allows it to be formed into folds : this appears to form nearly a complete valve, preventing, in a great measure, the return of the *fæces* into the small intestines. The ileum ends in the posterior part of the abdomen in a very large canal, the cæcum, which it enters abruptly ; so that it does not appear, like the other intestines, to be merely a continuation of the tube, with only a nominal division. The anterior part of the cæcum projects forward for nearly two or three feet, in the form of a large bag closed at the end. It has been supposed from the peculiar structure of this intestine in the horse, that it serves the office of a second stomach, and

IOD—IPE

that the macerated food from the small intestines, mixed with the bile and pancreatic juice, here undergoes some further change. The second of the large intestines is named Colon. It is small at its commencement, but soon after enlarges into a very capacious canal, which, when it has passed nearly round the abdomen, again forms a second but slighter contraction; after which it again enlarges, and passes round the abdomen, when, lessening a third time, it terminates in the Rectum. The rectum passes backward from the vertebræ of the loins to the anus. Its muscular coat is thicker than that of the other intestines. The anus or fundament is the termination of the rectum, and is shut by a circular muscle, termed Sphincter, which surrounds the end of the gut: it is likewise elevated and retracted by two pairs of muscles. (See *Nutrition*, *Mesentery*, and *Lacteals*.) Diseases of the intestines are noticed under the heads *Bowels, Inflamed*; and *Colic, Flatulent*.

IODINE. A new medicinal preparation obtained from kelp.

IPECACUANHA. According to Vitet, from half an ounce to an ounce of ipecacuanha causes a very painful effect upon a horse, and in a dose of three ounces produces very dangerous and even fatal symptoms. Bourgelat, in his *Matière Médicale Raisonnée*, observes, that "it does not cause any sensible evacuation in the horse and the cow, but occasions vomiting and purging in the pig, the dog, and the cat." He tried it in asthmatic affections without success. The dose for a horse is from about one dram to two or three. The disease in which he prescribes it is dysentery. Mr. Blaine prescribes it in dysentery and fever in the following form:

Opium, two drams.

Nux vomica, one dram.

Red wine, one quart.

Ipecacuanha, half an ounce.

To be given morning and evening. (See *Dysentery*.) It does not appear that the effect of ipecacuanha on the horse has been ascertained, either when given alone or mixed with opium, &c., as in Dover's powder; but as

IRI—ITC

we know that large doses, even an ounce or more, of emetic tartar, produce little if any effect on the stomach of the horse, though so powerful an emetic in the human subject, there is some reason to doubt the efficacy of ipecacuanha as a horse-medicine.

IRIS. That part of the eye by which the light admitted to the retina is regulated. See *Eye*.

IRON. There are several preparations of iron used in medicine, and all of them are supposed to possess a tonic and astringent quality. The sulphate and carbonate of iron are the preparations most commonly prescribed; but the tincture of muriate of iron is also used, especially in incontinence of urine. When prescribed in this complaint, it is commonly joined with tincture of cantharides.

IRRITABILITY. All muscular parts possess the property of contracting or shrinking when stimulated or irritated, and are therefore endued with irritability, which may either be healthy or morbid. Thus the bladder in its healthy state, when it contains a sufficient quantity of urine, has its muscular fibres irritated or stimulated, in consequence of which they contract, and the urine is forced out. Sometimes the bladder is so morbidly irritable, that it contracts upon the smallest quantity of urine, so that the animal is almost constantly endeavouring to stale, but voids only a very small quantity, and that with an appearance of difficulty and pain.

ISCHURY. See *Urine, Suppression of*.

ITCHING. Itching in horses is generally a consequence of foul feeding, and, when considerable, is occasioned either by lice or the mange. Bad hay, grains, malt-dust, &c., are apt to breed itching humours about the head, mane, tail, legs, &c. Improve the horse's diet; give the following alterative morning and evening in a bran mash; and let the following liniment be well rubbed into the part:

ALTERATIVE.

Take, Levigated antimony, three ounces.

Ethiop's mineral and nitre, of each three ounces.

Mix, and divide into twelve doses.

INT—JAR

LINIMENT.

Flowers of sulphur, four ounces.

Oil of turpentine, four ounces.

Oil of tar, four ounces.

Train-oil, six to eight ounces.—Mix.

Before this liniment is applied, the affected parts must be thoroughly cleansed with a hard brush, soap, and water, and then wiped quite dry. The liniment must be *well rubbed into* the parts. See *Mange, Humours; Lice, and Calkins*.

INTUS-SUSCEPTIO. Iliac passion. A disease of the bowels, occasioned by one portion of them being forced down within another. It occasions violent colic, which often ends fatally. I have never met with a case of this kind in any animal; but I have seen a portion of the small intestines, about two feet, strangulated and mortified, by having forced its way through the mesentery. The symptoms were those of violent colic and inflammation of the bowels, which resisted all the remedies employed.

ISSUES. See *Rowels*.

IVES. See *Vives*.

JALAP. The root of jalap is an excellent purgative in the human body, and formerly was a general ingredient in the purgative medicines or *physic* (as such compositions are termed) of horses. The moderns, however, in this country, appear to have given it up entirely. According to Bourgelat, it is purgative in the sheep, the goat, the dog, and the cat; and on the horse it acts as a diuretic. He further observes, that, joined with aloës, it purges both horses and cows; and that, when the fluids of the body are in excess, it is an useful addition to aloës. The dose for horses and cows is two or three drams; to the smaller animals, half a dram to a dram. See vol. ii. of *White's Farriery*, art. *Jalap*.

JAPAN EARTH. *Terra Japonica; acacia catechu*; extract of catechu. A powerful astringent, often employed in the chronic diarrhœa or scouring of cattle. See *Scouring and Catechu*.

JARDON. A name formerly applied to swellings under the point of the hock. It is a French term, and

JAU—JOI

nearly, if not quite, obsolete in this country. It appears from Lafosse's description to be nearly the same disease as curb, and requires the same treatment. See *Curb*.

JAUNDICE. A disease of the liver, in which the stomach, the bowels, and the whole system generally participate. The symptoms are, heaviness and depression of spirits, lassitude, weakness, want of appetite, yellowness of the eyes and mouth, costiveness; the little dung that is voided being in small hard knobs, and often covered with mucus or slime; urine high-coloured, and generally in small quantity. Bleed, and give the following balls; throw up clysters; and keep the horse on green food or bran mash, with a small quantity of the best hay.

BALL FOR JAUNDICE.

Take, of Barbadoes aloës, one ounce.

Castile soap, one ounce.

Ginger, three drams.

Treacle, enough to form the mass.—To be divided into two balls.

Give one in the morning; and if that do not cause some degree of purging in twenty-four hours, administer the other. After the bowels have been sufficiently opened, some gruel may be beneficial. If the purging should appear too violent, some arrow-root gruel should be given to restrain it, or, if that cannot be had, some fine wheat-flour gruel. When the horse is a little recovered, he should be turned out for a few hours in the day; and, if the weather is favourable, this may be done at any period of the disorder. The best method of re-establishing the horse's strength is to let him run at grass for a sufficient time. See *Yellows*.

JAW-SET, JAW-LOCKED. See *Locked Jaw*.

JEJUNUM. Part of the small intestines is thus named, from its being generally found empty. See *Intestines*.

JESUIT'S BARK. Peruvian bark. See *Bark*.

JOINTS. A joint is formed, generally speaking, by the ends or heads of two or more bones: these ends are covered by a layer of cartilage or gristle, which is of a yielding and elastic nature: there is formed, within the joint, a slippery fluid, called Synovia or Joint-oil. The

JOURNEY.

ends of the bones thus covered with a smooth yielding surface, so slippery as to move freely upon each other, without suffering from friction, are then firmly tied together by a strong inelastic substance named Ligament, which completely surrounds the heads of the bones, as far at least as they are covered by the smooth cartilage. This is termed the Capsular Ligament: it is not so tight as to prevent the necessary motion of the joints, but sufficiently so to hold them firmly in their situation. The capsular ligament possesses but little sensibility on its outer surface, but within is highly sensible and vascular; and it is principally from this inner surface that the synovia or joint-oil appears to be formed. It is from the great sensibility of this inner surface, that such serious inflammation is produced by wounding the capsular ligament, and suffering the synovia to escape. (See *Wounds of Joints*.) In some joints we find an additional ligament within the capsular ligament or cavity: thus, in the hip joint, there is a strong ligament connecting the head of the thigh bone with the socket that receives it. In the stifle, also, there is a strong ligament within the cavity of the joint; and here we find also slippery cartilages interposed between the moving surfaces of the bones, by which their motion is considerably facilitated. See *Ligament*.

JOURNEY. To prepare a horse for a journey, he should have two hours' walking and moderate trotting exercise every day. His feet should be stopped with cow-dung, especially if they are at all hot and dry. His daily allowance of hay should not exceed ten or twelve pounds, and of oats three or four quarters, according to his work. If a horse has been accustomed to eat an immoderate quantity of hay, and has thereby acquired an increased capacity of stomach, he will be apt to eat his litter when limited in hay: this may be prevented by a muzzle. Such horses have generally a craving appetite for water, as well as for hay, which may be diminished by wetting the hay and oats. If any thing should occur to prevent the horse being exercised, let a cold bran mash be substituted for one of his feeds of oats. When the hay and the oats are wetted, about three gallons of water are sufficient for a day's allowance.

JUG—KIB

A horse should be shod about a week before he sets out on a journey. The saddle or harness should be carefully examined and made to fit well; and, if a carriage-horse, he should be exercised in harness. During the journey he should be carefully kept within his allowance of hay, and have his allowance of oats increased should his work require it. A horse should be kept without food and water for an hour, at least, before he sets off on a journey; and when this has been neglected, he should be walked for the first four miles.

JUGULAR VEINS. The large veins of the neck, where a horse is bled.

JUNIPER. The berries and the essential oil of juniper are used in horse-medicine. The berries, pounded with a little nitre and anise-seed powder, make a good diuretic. The essential oil is a good diuretic and carminative. The dose, three or four drams. Oil of turpentine seems to possess nearly the same medicinal qualities, and, being considerably cheaper, is generally preferred. See *Turpentine*.

K.

KALI, PREPARED. A name formerly given to carbonate of potash. It is known also by the names, Salt of Tartar, and Salt of Wormwood. See *Potash*.

KERMES MINERAL. Precipitated sulphuret of antimony. This preparation of antimony is sometimes employed as an alterative in cutaneous disorders. The dose from half a dram to one or two drams daily, for a few days or a week.

KERNEL. A popular name for gland: thus the parotid glands, situated beneath the ear, are termed the Kernels under the Ear, and the submaxillary glands under the jaws, the Kernels under the Jaws.

KIBED HEELS. Cracked heels. If the heels be inflamed and tender, wrap them in an emollient poultice, and afterwards dress them with a little goulard ointment. When dry and free from tenderness, apply a little salad oil, or goose-grease, to prevent their cracking and becoming sore. In winter these cracks are often

P

KIDNEYS.

very troublesome, and sometimes so tender as to make a horse go stiff, and even lame: when cured, they are apt to return, unless the heels are taken great care of. The best preventive is goose-grease or salad oil, and cleanliness. The heels of the hoof, and back part of the frog, are often dry and full of cracks at the same time. After washing out these parts, and letting them become dry, rub in some tar ointment, which is made by melting equal parts of tar and tallow together, and stirring the mixture until it becomes cold. I am inclined to believe that these cracks often originate in the foolish practice of trimming the heels; but sometimes they are evidently the result of negligence, and suffering the horse to stand constantly on hot filthy litter, aided, perhaps, by foul feeding.

KIDNEYS. Two glandular bodies situated within the abdomen, and attached by cellular membrane to the loins. Their office is to carry off the superfluous fluids and excrementitious parts of the blood in the form of urine. In man the skin is the great emunctory of the body, and the kidneys one of a secondary order; but in animals, especially such as are improperly fed, the kidneys are the parts principally concerned in carrying off the impurities of the blood. If we look into a stable where horses are allowed an unlimited quantity of hay and water, or where they are fed on grains and indifferant or bad hay, we shall always find that the urine is in large quantity, very foul, and stinking. From this it is evident that the sanguiferous system is relieved of a great quantity of excrementitious matter by the urinary organs. The diseases engendered by improper feeding are always relieved by diuretic medicines: this is so well known, that there are more diuretics employed in horse-medicines than all other medicines put together. It may appear from this circumstance that no danger is to be apprehended from giving horses as much hay as they like, and that any hay is good enough if they will eat it, provided they take a sufficient quantity of diuretic medicines. But independent of the expense of these medicines, and the trouble of giving them, it should be considered that they gradually injure the kidneys and

KIDNEYS.

bladder. It is much better, therefore, to render them unnecessary, by giving horses a proper quantity of the best food, and only a sufficient quantity of good water. (See *Feeding, Hay, Appetite, and Water.*) From a cavity in the centre of each kidney a canal or tube proceeds, by which the urine is conveyed to the bladder. These tubes are named Ureters. Before the ureters enter the bladder, they pass for a little way between its coats; which course effectually prevents the urine from flowing back into the ureters when the bladder contracts in order to empty itself. The horse's kidneys are readily affected by diuretic medicine, and those medicines which in the human body cause perspiration, such as the preparations of antimony, act most commonly on the horse as diuretics. Stones are sometimes formed in the pelvis, or cavity of the kidney, whence they sometimes pass into the ureter, but are not often found in the bladder. I have known one case of a small stone being found in the urethra, or passage from the bladder through the penis, near its extremity: it obstructed the urine for some time, but was sufficiently near the end of the passage to be taken out without cutting. Inflammation of the kidneys sometimes happens in consequence of excessive exertion or strains of the loins; and sometimes peritoneal inflammation of the bowels spreads to the kidneys. Whenever the kidneys are inflamed, there is an almost constant desire to void urine, while only a very small quantity of high-coloured or bloody urine is now and then passed with considerable difficulty and pain. There is a stiffness or lameness of one or both hind legs, and sometimes griping pains, the horse lying down and suddenly getting up again, groaning and rolling about. The pulse is quick, and the membrane of the eye red. Early and copious bleeding is the first remedy. The loins should be covered with a fresh sheep's skin; previous to which some volatile liniment may be well rubbed into the back and loins. The bowels may be emptied by means of clysters of warm water and a little oil only: if any thing more be found necessary for this purpose, give a pint of castor oil. Horses are often affected with an irritable state of the bladder, and pro-

KIDNEYS.

bably at the same time an unusual acrimony of the urine: this causes too frequent staling; a small quantity only of urine being voided, and that with apparent difficulty. This is soon relieved by clysters of warm water and oil, and a few quarts of infusion of linseed: should this fail, a ball composed of one ounce of nitre and two drams of camphor may be given. See *Urine*.

Horses are sometimes affected with a gradual decay of the kidneys; which are found, after death, considerably enlarged. I have sometimes seen them almost like coagulated blood, only a small part of their natural structure remaining; at others unusually red, and yielding, upon pressure, bloody water or very thin blood. I think it probable that all these diseases of the kidneys are brought on by over-exertion, such as carrying very heavy burdens, drawing heavy loads, and, especially, keeping back vehicles heavily laden when going down hill; in short, by immoderate work of any kind. Another cause, perhaps, is the common practice of giving diuretics upon every trivial occasion, or rather by giving occasion for the use of such medicines through improper feeding.

There is another disease of the kidneys which causes profuse staling, and is named *diabetes*. This disorder is often an attendant on a broken constitution, and will admit only of palliation: sometimes it appears to be brought on by hard labour, and sometimes by new hay and oats, or unwholesome provender of any kind. The best remedy is rest and cordials, or tonic medicines with opium. Sulphate of copper has been successfully employed in this disorder. In bad cases of diabetes, the urine is in large quantity, dark-coloured, and very offensive; and the disease is attended with great thirst and variable appetite. In the less dangerous species of this complaint, the urine is frequently transparent, especially if the horse be permitted to drink freely. The diet should consist of oats and the best hay in moderate quantity. A handful of wheat flour may be stirred into the horse's water, or given in gruel. The following ball may be beneficial:

KIN—LAC

Powdered gentian, two drams.
Opium, half a dram to a dram.
Treacle, enough to form the ball.

OR,

Powdered catechu, two or three drams.
Powdered allspice, two drams.
Ginger, one dram.
Opium, half a dram to a dram.
Oil of caraways, twelve drops.
Treacle, enough to form a ball.

Should these balls prove ineffectual, the sulphate of copper may be tried in doses of half a dram, or the sulphate of zinc: the dose from one to two drams. Rich broths seasoned with salt and spices have been recommended. See *Diabetes*.

KINO. An astringent gum-resin, which is sometimes employed in the chronic diarrhoea or scouring of cattle. The dose two or three drams, or more.

KNEES, BROKEN. If much bruised or lacerated, bleed the horse, keep him perfectly at rest, and apply an emollient poultice until the inflammation has subsided. Then wash once or twice with a solution of blue vitriol, and afterwards apply an astringent paste made of finely powdered alum, pipe-clay, and as much water as will give it the consistence of cream. This may be repeated every second day, washing the knee before each application. Should this dressing do harm, apply digestive ointment. When a flap of skin hangs down from the knee, cut it off at once, as all attempts to reunite it will not only be fruitless, but tend to increase the blemish. When the knees have been much bruised, after the wound is quite healed, apply a mild blister of finely powdered cantharides and sweet oil, and give the horse a run at grass. Slight injuries of the knee may be healed by a little tincture of myrrh; and the blemish that it leaves may be in great measure concealed, and the growth of hair promoted, by mercurial and spermaceti ointment coloured with bole or ivory black.

L.

LACTEALS. Absorbent vessels which convey the chyle from the bowels to the thoracic duct, whence it passes

LAD—LAM

into a large vein near the heart. In horses that are killed on account of glanders, or in consequence of some accident, (especially if some oats be given them a few hours before they are killed), these vessels are seen to great advantage. They will then be found spread over that thin membrane of the small intestines named Mesentery, full of a white fluid resembling milk.

LADANUM. A resinous substance employed in the composition of warm plasters.

LAMENESS. The cause of lameness in horses is often very obscure, and can only be discovered by a patient and careful examination. A slight degree of lameness often passes unnoticed; or if it be observed, the proprietor too often persuades himself that it will pass off by continuing to work the animal, or merely by turning him to grass for a short time. It is always the most prudent plan to lay up a horse the moment he is observed to be lame, in however slight a degree, and submit to the inconvenience of doing without his services until he be perfectly and permanently cured. It is the same with illness: hundreds of horses, especially young ones, have been destroyed by continuing to work them after they have been attacked by illness. When lameness is caused by wounds or bruises, the injured part is generally discovered without difficulty, though thorn-wounds or pricks are not always so easily seen; but lameness from injuries within the hoof is often detected with difficulty. Slight lameness is most readily perceived by making a horse trot gently, without giving any support to the head by the bridle or halter, and without urging him with the whip: the lameness is then seen by his dropping harder and dwelling longer on the sound leg than on the lame one, in order to favour the latter; and this, when the lameness is at all considerable, is attended with a corresponding motion of the head, which drops a little whenever he steps on the sound limb. An experienced observer, however, can distinguish lameness merely by seeing a horse walk out of the stable. It often happens, in very severe lameness of one or both fore feet, that the horse, when led out, will appear to be lame in the hind feet also: this is occasioned by the animal's endeavouring to favour the

LAMENESS.

fore foot or feet by throwing his weight as much as he can on his hind legs. Having ascertained in which limb the horse is lame, the next thing to be done is to find out in what part of that limb the lameness is situated. Here lies the difficulty of the investigation; and the greatest care and patience are generally required, in order to give a satisfactory opinion of the case. Mr. James Clark very properly advises, if the nature of the case appear doubtful, to inspect the foot again the next day, or even a third time, rather than give too hasty or precipitate an opinion with respect to the seat of lameness, for the foot is always to be suspected, especially after a horse has been new shod, or has had his shoes refastened, or when the shoe lies too flat or presses upon the sole, or when there is a corn in the foot. No certain rule can be laid down for discovering the seat of lameness by the manner of a horse's going; for when any of the parts necessary to the motion of the body are injured, the adjacent parts will be more or less affected. Thus a wound or prick in the foot may cause an inflammation of the leg, and may even affect the muscles of the shoulder. Mr. R. Lawrence observes, that "a peculiar conformation of the limbs renders a horse more subject to lameness of one kind than another. Thus horses with short pasterns, and whose fore legs incline much under the body, are most liable to bony excrescences, such as splent, ringbones, &c. Horses with long pasterns, on the contrary, are more subject to ligamentary lameness than others; but as the great length of the pastern gives more pliancy and elasticity, they are consequently less exposed to those diseases of the bones which arise from concussion, such as ringbones. Horses that are cat-hammed or cow-houghed are particularly subject to spavins, curbs, and thoroughpins. The tendency to lameness of every description is greatly increased by working a horse at too early an age, and particularly by placing too much weight upon them at that period." "Farmers and breeders of horses ride them from three years old, until their legs and feet, from premature exertion, are so much injured as to render their soundness doubtful: and this state often comes on before they

LAMENESS:

are six years old. Under these circumstances they are offered for sale, and generally warranted sound. But though such horses do not manifest lameness in any particular leg by a want of harmony in their motion, yet their injured state may be detected by their stepping short with their fore legs, and pressing principally on the toe; and upon examining the legs when standing still, if the pasterns (particularly long ones) appear perpendicular and not oblique in their direction, or if the fetlock joint knuckles over, or, in other words, bends forward, little doubt may be entertained of their being unsound." In all cases of lameness, unless the cause is so evident as to render it unnecessary, it is proper to examine the foot carefully in the first place; and it should never be forgotten that swelling, heat, and tenderness of the fetlock joint, or even of the leg, may arise from an injury of the foot. In lameness of the foot, we generally find the affected foot warmer than the other, especially about the coronet or towards the heels: this, however, is not always the case, for I have known it colder than the other. Having taken off the shoe, let the frog, and especially the cavities in the centre and each side, be carefully examined, as these parts are liable to be wounded by the horse stepping on a nail, which may remain in the part, but may be discovered by cleaning out those parts, and scraping them a little with a small drawing knife. The sole should then be cleaned off with the flat part of the drawing knife, to ascertain if any part has been bruised. This is sometimes indicated by redness of the horn, especially when it is in the heel, where a bruise is named a *corn* (see *Corns*); but when nothing of this kind is perceived, another trial is to be made by pressing the sole all around by means of pincers. When the horse is observed to flinch upon pressing or pinching any particular part, there we may suspect the injury lies, and may be occasioned either by the pressure of the shoe, or by being pricked in shoeing; an accident occasioned by driving a nail through the hoof so far as to wound the sensible or fleshy parts of the foot, or else so near to those parts as to cause pain by its pressure. In either case the injury

LAMENESS.

is to be treated as directed under the articles *Pricking*, *Corns*, and *Bruises of the Foot*. Lameness often depends upon a slow or chronic inflammation of the sensible foot generally, but more especially of those highly vascular and nervous processes or membranes by which the hoof is united to the coffin bone. This kind of lameness generally comes on gradually, and often proceeds very slowly. It is most visible when a horse is led out of the stable, and made to trot a little, the morning after a day's work. After travelling a few miles, especially if he be a horse of good spirit, it goes off entirely, and is not observed again until the horse has had some rest and is again led out of the stable. In this kind of lameness there is generally an increased heat of the foot, which in time causes the horn to become dry and liable to crack, especially around the coronet (where the hoof appears to be depressed or sunk in a little), and at the heels and bulbs of the frog. The heels are often narrow or contracted, but not always; and the frog is sometimes rotten or thrushy. If the horse has one fore foot white or partially so, that foot is more liable to this kind of lameness than the other; and I think the *near* or left foot more so than the *off* or right. Sometimes, when standing before the horse, and examining both feet attentively, we find the lame foot smaller than the other, and this is an unfavourable appearance. This kind of lameness is in some degree hereditary, or rather the disposition or tendency to it is so. Most commonly, however, it is a consequence of working horses at too early an age, assisted by standing on hot litter in hot stables, instead of living in the open fields, where they should always be kept until they have arrived at maturity. This lameness often proceeds by such almost imperceptible degrees, that it is generally neglected until incurable. Considerable relief, however, may almost always be afforded by keeping the feet cool and moist, either by pasturing the animal in some soft meadow-ground, or by stopping the bottoms of the feet with cow-dung and clay, by paring them when necessary, and by wrapping round the coronet several folds of old

LAMENESS.

linen, which must be kept constantly moist. When the frog is so rotten and thrushy as to cause tenderness and danger of the horse falling when going on the road, a solution of blue vitriol may be applied, and a bar-shoe be put on; but if, by drying up the thrush, the lameness and heat of the foot seem to increase, the whole foot should be wrapped up in a poultice. (See *Thrush*.) In bad lamenesses of this kind, it is usual to blister the leg, and turn the horse to grass for a considerable time; but a radical cure is seldom accomplished. Boots lined with sponge, which are kept constantly wet, have been made for tender and contracted feet; but they do not appear to be much used, nor do I think any considerable benefit can be derived from them. They often soften the horn too much. I have seen much good done, after stopping the feet with cow-dung a few days, and afterwards paring away all the loose parts of the sole, by stopping the feet with what is called the *warm stopping*, that is, an ointment made of tar and tallow melted together, or turpentine and lard. This seems to be absorbed by the sole when it has been sufficiently pared, and the stopping is compressed against the sole by means of transverse slips of wood, the ends of which are confined under the shoe. This operation is well known and properly practised by shoeing smiths. The lameness now under consideration is, I think, more frequent than any other, although the opinion of some experienced veterinarians is, that the lameness we shall next describe is the most common. The names generally applied to this lameness are *contraction of the heels*, *chronic founder*, or *chronic lameness*. If we observe the slanting position of the horse's pastern, it will readily be seen what an immense weight must be sustained by the ligaments of the fetlock joint; and if we examine a perpendicular section of this part, it will be seen, also, that the ligaments of the pasterns, the navicula or nut bone, and the coffin bone, have likewise a considerable share in performing this office. These parts are often the seat of lameness, especially in horses with long pasterns. Such lameness is generally known by the horse's

LAMENESS.

manner of standing, as he generally keeps the pastern upright in order to ease the affected part, and the fetlock joint often appears to be tottering forward. Another character of this lameness is its getting worse by exercise. Injuries of the coffin joint sometimes happen suddenly, and are commonly called strains of the coffin joint, but more probably depend on the rupture of some ligament, or some of those vascular membranes which pass from the *perforatus* tendon to that which, passing through it, is named *perforans*. These membranes are seen within the two tendons, in different situations. (See *Strains*.) We sometimes find, on examining a lame foot, that there is an enlargement immediately above the coronet, at the heels and quarters, and that this enlargement feels hard and bony. This consists in an ossification of the lateral cartilages, and is considered as a species of *ringbone* (see *Ringbone*): it is more distinctly perceived by comparing it with a sound foot. In lameness of the foot there is sometimes a longitudinal crack in the horn towards the heels, extending from the coronet a little way down the hoof: through this we occasionally find a little blood oozing, especially after the horse has been travelling. This is named *sand-crack*, which see. When nothing can be found in the foot to account for the lameness, the fetlock joint should be carefully examined; and if this be the seat of lameness, some degree of swelling and increased heat will be perceived: as the horse stands, he will be observed to favour the joint. Lameness of the flexor tendons, or back sinews, is easily perceived by the swelling, heat, and tenderness of the part. (See *Strain of the Back Sinews*.) A horse sometimes goes lame from painful sores or cracks in the pit or hollow of the heel, that is, on the back part of the pastern: these are sometimes named *scatches*, and are often very troublesome in winter. These sores frequently cause so much pain and stiffness, when neglected, as to make a horse stumble. (See *Cracks in the Heels*.) Painful cracks or sores sometimes happen in the bend of the leg, at the back of the knee: these are named *Mallenders*, which see. Lameness sometimes depends on an injury of the mus-

LAMENESS.

cles of the shoulder, which is easily perceived by the difficulty and pain the horse feels in extending the limb. (See *Strain of the Shoulder*.) I have met with cases of lameness which appeared to depend on an injury of the head of the shoulder bone: in these cases there was a hard swelling on the outside of the point of the shoulder. The remedy for this is blistering or firing, and a run at grass. Should these fail, a patten-shoe may be put on the other foot. The seat of lameness in the hind parts is sometimes as difficult to be discovered as it is in the fore legs; but it seldom happens that the foot is the part affected, or that the lameness is brought on by standing in the stable. Over-exertion, or immoderate work, is almost always the cause of lameness in the hind parts, and especially the practice of working horses at too early an age, and over-weighting them. From this cause proceed the diseases named Spavin, Curb, Windgall, and Thoroughpin, which see. Injuries of the back are not unfrequent in draft-horses, and cause a stiffness in the motion of the hind legs; and according to the observations of the illustrious Doctor Jenner (who, notwithstanding the important objects which have engaged his attention, has condescended to communicate to me some useful observations on the diseases of horses and cattle), the disease named *Stringhalt* depends upon a disease of the spine. (See *Stringhalt*.) There is another lameness of the back, which has been supposed to depend on some injury of those ligaments by which the pelvis is joined to the sacrum, and sometimes on an injury of the ligaments of the spine; but I believe it is often occasioned by an injury in the muscles of the loins, and sometimes arises from a disease of the spinal marrow. These lamenesses are often incurable, especially when so considerable as to make the horse appear loose in his back when trotting, or as if there were a new joint in the back, towards the rump. It is sometimes so bad, that the hind legs give way, and are unable to support the body: the bladder then soon becomes palsied, and the horse after a short time dies. In all lamenesses of the back, the horse should be plentifully bled as early as possible, and have the bowels emptied

LAMENESS.

by clysters. Covering the loins with a fresh sheep's skin is a good remedy; and when this cannot be had, the back should be blistered. Perfect rest is of course necessary; and sometimes even the support of a sling and breeching may be required. This kind of lameness, when considerable, is generally thought incurable; but *our failures often depend on a want of early attention*, which, next to preventive measures, is an object of the greatest importance. The same observation is applicable to all strains, and probably to all lamenesses, of what kind soever they may be. The only disorders which cause lameness in the hind feet, fetlock joints, and pasterns of horses, are thrushes, canker, wounds, bruises, and treads, pricks in shoeing, punctured wounds from thorns or stubbs, ringbones, strains, quittor, grease, scratches or cracks, and sandcrack, all of which are noticed under their respective heads. It may not be superfluous to remark, though I believe the advice is contained also under some other head, that horses sometimes are made lame, and even thrown down, by the withers being pinched, and the motion of the shoulders impeded, by the pressure of the saddle. I had almost forgotten to observe, that lameness seems sometimes to be caused by rheumatic pain (see *Rheumatism*), and gravel being forced into the sensible foot in travelling. (See *Gravelling*.) Mr. James Clark relates a case of lameness in the shoulder from a bony excrescence growing under the shoulder blade, which of course was not suspected during the animal's life. Lameness is sometimes caused by blows on the hip in falling, or blows on the part named Round bone, which in fact is the great process, or rather protuberance, at the head of the femur or thigh bone. Though the joint lies much deeper, yet the blow may produce inflammation, or even fracture of some part of the bone. I have seen an enlargement or swelling on the round bone, as it is termed, produce lameness, which I thought depended on the head of the bone being forced, by the muscles lying over it, too much into the socket, so as to render motion painful. This made the horse throw his weight on the opposite leg in trotting, which was clearly seen by the hind

LAM—LAR

parts inclining a little to that side. The disorder was cured by firing, blistering, and rest. The part of the pelvis or basin, named *Os innominatum*, is sometimes fractured, and often causes permanent lameness. I have seen an obstinate lameness of the hind leg, which appeared to depend on some injury or disease in the hip joint, cured by firing, blistering, and placing a patten-shoe on the foot of the sound limb for about a fortnight. Horses are sometimes lamed by the smith paring the sole too much towards the toe, and placing the shoe so as to bear on it. See vols. i. and iii. of *White's Farriery*.

LAMPAS. A swelling and sometimes tenderness in the roof of the mouth, adjoining the front teeth. All young, and some aged, horses, have a fulness of this part, so that it becomes almost on a level with the front teeth. The common practice is to burn down the swelling with a hot iron, but this is never necessary. When the part is tender, and prevents the horse from feeding, it should be scarified, and a little powdered alum or salt afterwards rubbed into the part. The colt should be fed on bran mashes for two or three days.

LANCET. An instrument sometimes used to bleed horses, but the fleam is more commonly employed.

LARYNX. The upper part of the *trachea* or windpipe. The larynx is composed of five cartilages, which are named Thyroid, Cricoid, two Arytœnoid, and Epiglottis. All these cannot be seen as distinct parts, except in very young animals. The upper opening of the larynx is named *glottis*. The internal surface is a mucous membrane of great sensibility, and probably the part affected in chronic cough and roaring, in which latter disease I have seen it ulcerated. (See *Roaring*.) It is worthy of remark that, though the membrane which lines the windpipe appears to be a continuation of the same membrane which lines the larynx, the former is nearly, if not quite, destitute of sensibility. This I have ascertained by opening the trachea, introducing my forefinger and scratching the membrane. I did the same with a bit of straw, which the horse did not appear to feel; but on passing it upwards, the moment it touched the larynx, the most violent irritation and coughing was produced.

LAV—LEA

I have tried this experiment several times with the same result. In the roarer where I found an ulcer in the larynx, just at that narrow part named the *rima* or chink, the most distressing irritation and wheezing were produced whenever the horse was made to exert himself, and this rendered him so useless that he was killed. In another horse, that was destroyed on account of being glandered, I found almost the whole of the internal membrane of the trachea ulcerated; but this horse was not observed to have a cough, nor was he a roarer, the glanders being the only disorder he laboured under.

LAVENDER. The only medicinal preparation this fragrant plant affords is a compound spirit of lavender, or red lavender, which is a good cordial. The dose for a horse is about half an ounce, diluted with half a pint of water or some aromatic infusion, such as peppermint tea, as it is commonly named: pennyroyal, rosemary, &c. would answer the same purpose.

LAX. *Diarrhæa, Scouring.* See these articles.

LAXATIVE. Medicines which purge gently, and without irritating the stomach and bowels much. Of this kind are castor oil, olive oil, and probably all other expressed oils; Glauber's and Epsom salts. The following is an effectual laxative.

Take, of Barbadoes aloës, two drams to three.

Carbonate of soda or potash, two drams.

Boiling water, half a pint.

Mix. And add afterwards

Castor oil, eight ounces.

Three or four drams of aloës, with an equal quantity of soap, will generally open the bowels moderately, without causing sickness or any kind of uneasiness.

LEAD. From this metal we have several medicinal preparations, which are chiefly, indeed almost entirely, employed externally. Among these are litharge, red lead, or minium, white lead, sugar of lead, now named superacetate of lead, and Goulard's extract, or liquid subacetate of lead. (See *Acetates*.) White lead is sometimes used in making healing ointments, litharge in making Goulard's extract and diachylon plaster, and red lead in some few other plasters.

LEN—LET

LENS, CRYSTALLINE. See *Eye*.

LETHARGY. This disorder in its highest degree becomes apoplexy, either simple or symptomatic; that is, it may be merely an affection of the brain, arising either from too much blood determined to it, or from the rupture of a blood-vessel; or this increased determination of blood to the brain, and consequent rupture of a vessel, may be occasioned by a loaded stomach, and a loss of power in that organ. The latter disease is named Stomach Staggers. (See *Stomach Staggers* and *Apoplexy*.) According to Gibson, "When a horse falls into a lethargy, he generally rests his head with his mouth in the manger, and his poll often inclined to one side; he will show an inclination to eat, but for the most part falls asleep with the meat in his mouth, and seldom chews, but swallows it down: unless he is roused, he presently falls asleep again. If a horse continues any time in this state, he falls into an atrophy or universal decay; especially if his lungs, liver, or any other of the principal viscera, be faulty, or if he has received any hurt in the head." I have been informed by Mr. Poole, a respectable practitioner, that before the moors were enclosed, in the district where he resides (near Wells, Somerset), lethargy frequently occurred, and destroyed more horses than any other disease; and that since they have been enclosed, the disorder has scarcely been known. He attributes the disease to a plant which grew very abundantly in the moors, called *ragwort*, and in Culpepper's Herbal *staggerwort*. The following is his description of the symptoms. Standing in one place two or three hours while others were feeding; gaping seven or eight times without intermission; resting the chin on a gate, stile, or manger; or pushing the head against a tree or post: the urine and dung in small quantity, the latter often with mucus or slime on its surface: at last rambling about, catching here and there a mouthful of grass; till at length life is terminated in a pond, ditch, or river. Bleeding, in the usual quantity, he says, was sure to prove fatal. Horses in this state sometimes lived two or even three months. It was generally considered incurable; but he cured one with beer.

LETHARGY.

and ginger, and another with snake-root, mustard, saffron, compound spirit of lavender, and ginger. Mr. Poole adds, that in the next parish moor, where this herb abounded, and where many cattle were kept, cows were seized with this disorder, and died in the same manner, and that he never heard, on inquiry, of one cured. He lost two mares and a colt of his own in this disorder, which farmers call the *Pope*. Sheep eat the ragwort greedily, and are not hurt by it. The disorder here described seems to correspond in its symptoms with those of the disease I have named Stomach Staggers, except in the length of time it continued. (See vol. i. and iii. of my *Farriery*.) It does not appear that Mr. Poole examined the stomachs of the horses that died; yet it seems probable, that had the stomach been crammed with undigested food, as I have so often found it, it could hardly have escaped notice: and indeed, with a stomach so distended, it appears impossible for the animal to survive more than a few days; whereas, according to Mr. Poole, horses sometimes lived with this disorder two months. There are various degrees of lethargy, from languor, heaviness, and an unwillingness to work, to sleepiness, vertigo or giddiness, and apoplexy. All these degrees of lethargy are brought on by immoderate work and improper feeding. Either of these causes separately will often produce some degree of lethargy; but when conjoined, the strongest constitutions must yield to them. In many horses the brain is the strongest of the vital organs, and is not so liable to become affected as the lungs, or organs of breathing. The stomach, and parts connected with it in performing the digestive and chylofactive function, are sometimes the most susceptible; but such is the connexion, by means of nervous communication, between all the organs of the body, that whenever one of the vital organs is injured, all the others sympathize with it, in a degree proportionate to their affinity to the injured organ. The stomach and brain, for example, are so nearly allied, that one cannot suffer much without the other; and the functions of the stomach, again, are so intimately connected with those of the intestines, that they seldom suffer separately. The same

LETHARGY.

affinity may be observed between the intestines and the liver. It is on this account that the stomach, the intestines, and the liver, are considered as the digestive organs. For, though the stomach has the principal share in this important office, if the bowels become torpid and loaded with excrement, and are suffered to remain in that state, the liver becomes surcharged with venous blood, and is incapable of performing its office properly. In this case the stomach is always disordered : hence we have imperfect digestion, imperfect chyle, and often loss of appetite ; hence also arise heaviness, sleepiness, languor, nervous affections, giddiness, and lethargy. Were the horse kept in a state of nature, he would no doubt be as free from disease as other animals in similar situations, provided his labour or exertions never exceeded his capacity or power. The horse is an animal of a generous spirit, and highly susceptible of the stimulus of emulation ; he is therefore easily urged to exertions which are injurious to him. When we consider this, and at the same time reflect on all the circumstances connected with his domesticated situation, such as being taken into the stable, fed on dry food, and put to hard work often two or three years before he has attained his full growth and strength, and the little attention paid to the quantity and quality of the hay he eats or the water he drinks, we cannot wonder at the number of disorders to which he is rendered subject. The expense of oats and beans is often a wholesome restraint upon the use of that kind of food ; but bad or indifferent hay can always be had so cheap, that the quantity given is seldom attended to. Another and a frequent cause of disease is, that breeders are not so particular as they should be in the choice of stallions and mares, many of them being injured in their feet or limbs, and weakened in their constitutions, before they are used for breeding : from such stock, a vigorous, healthy progeny cannot be expected. It is a very common thing to see a horse nearly or quite worn out by the time he is seven years old ; an age when, if he had been properly treated, he would have been in his prime. A horse's stomach is naturally remarkably

LETHARGY.

small. If we examine the stomach of a young horse, that has been kept on a moderate quantity of good hay, and a proper allowance of oats, we find it small, containing but little food, and its coats remarkably strong and muscular. I have had an opportunity of examining a great number of such stomachs in the army, at times when glanders prevailed; for cavalry horses are not allowed more than twelve pounds of hay in twenty-four hours. If, on the other hand, we examine the stomachs of horses that are brought to the kennel, we shall generally find them three or four times their natural size, and proportionably thin, and consequently weak. The largest I ever met with was in a horse at Exeter, that died of stomach staggers. The stomach was freed from the bowels, spleen, and other parts; and, as there happened to be large scales near, it was weighed, with the hard undigested food it contained, and was found to exceed sixty pounds! How easy would it be to weigh out the daily allowance of hay to a horse or a team of horses, and prevent a horse, when young and first brought into the stable, from stretching his stomach, and acquiring that inordinate appetite which is now so common! Bad hay is dear at any price; but, should the price of hay rise ever so high, it would be greatly to the advantage of horse-proprietors to buy none but the best. The allowance of a cavalry horse is twelve pounds, and no horses are in better condition. I have seen a stud of thirty hunters (Colonel Berkely's) in good condition, on only eight pounds of hay daily, and five feeds (each about a quarter of a peck) of oats. Some horses will eat twenty pounds of hay a day, and drink two or three pailsful of water, and many probably eat and drink a great deal more. There are some who, having but little work for horses, and that work irregular or uncertain, sometimes leave them a day or two in the stable without exercise, and with as much hay as they choose to eat. Such horses are sluggish and unwilling workers, and are generally in a lethargic state. When they are taken out, their bowels are so loaded with excrement, that they go more like a jaded horse than one in want of exercise; and, I believe, often tumble, merely on ac-

LEV—LIG

count of the manner in which they are kept. Whenever a horse is attacked with lethargy, in whatever degree it may be, the remedy is bleeding, according to the urgency of the case, and opening the bowels with clysters and a dose of opening medicine. When it amounts to apoplexy, I would blister the head also, and put a rowel under the jaws. It must be sufficiently obvious to the reader, that though the state of the horse may be amended by this treatment, the relief afforded will not be lasting, unless he be fed sparingly and have regular exercise. A bran diet is the best for such a horse (unless green food can be had), with only a small quantity of the best hay. When a horse has acquired an inordinate appetite, the best remedy is a long run at grass: he can seldom be perfectly cured in the stable unless he be young, and then it can only be done by perseverance in proper feeding and regular exercise. See *Feeding, Food, Exercise, Appetite, and Hay*.

LEVIGATION. Medicines are reduced to the finest powder by long-continued rubbing on a marble slab with a little water, in the same manner that paint is ground. A more effectual and a more easy method, provided the medicine be heavy, and not soluble in water, is to mix it up, when ground or pounded, with a good deal of water, and, after stirring it a little, let the mixture stand for a few minutes. All the coarse or gritty parts will then fall to the bottom, and the liquor will contain only the finest powder. This liquor must be carefully decanted off, and put aside until the fine powder has all fallen down; the clear liquor may then be poured off and thrown away, and the moist powder carefully dried. The coarse parts which remained may be again ground, and the finer parts separated in a similar manner. Chalk and antimony are thus prepared.

LICE. See *Lousiness*.

LIGAMENT. Ligaments are strong elastic membranes connecting the extremities of the moveable bones. They are divided into *capsular*, which surround joints like a bag, and confine the synovia or joint-oil; and *connecting* ligaments, which serve to strengthen the joint, and enable it to support the immense weight it is sometimes

LIG—LIN

forced to sustain. The great ligament of the neck, which goes from the back part of the head to the withers, is the chief support of the head and neck; and the ligaments of the fetlock joint sustain the weight of the body. The muscles, with their tendons, certainly contribute to this purpose; but the principal office of these parts is to move the different parts of the body, and the body itself. In doing this they become fatigued, and require rest in order to recruit their power; but the ligaments are of a different nature: in the healthy state they have but little sensibility, and as they are not possessed of any motive power, are never fatigued. It is a remarkable property of the horse's ligaments, that though sometimes ruptured when over-weighted, they more frequently become thickened and strengthened, and at length changed into bone. It is in this way that spavins and splents are often produced.

LIGATURE. Twine, thread, or silk, waxed, for the purpose of tying arteries, veins, or other parts.

LIGHT. Dark stables are injurious to the eyes, and probably in some degree to health. A moderate light, perhaps, is the best. See *Stable Management*.

LIGHTS. A common name for the lungs. See *Lungs*.

LILY. The root of the white lily has been employed in making what are termed Maturating, Suppurating, or Ripening Poultices. See *Poultice*.

LIME WATER. Lime water has been recommended in diabetes, vitiated appetite, chronic cough, and some other diseases. It is made by first slaking lime, and then pouring boiling water upon it. After stirring the mixture for some time, set it aside for an hour or two, and then decant off the clear liquor, which must be kept in well-stopped bottles.

LINIMENTS. Medicinal compositions for external use, rather thicker than oil. Liquid ammonia, commonly called Spirit of Hartshorn, and sweet oil, in equal proportions, form a good liniment for indolent tumours: it is called Volatile Liniment, and is improved, perhaps, by the addition of camphor, when it is named Camphorated Liniment of Ammonia. There are other formulæ for liniments in my Pharmacopœia, such as liniment of ver-

LIN—LIV

digris, commonly called **Egyptiacum**, **Soap Liniment**, or **Opodeldoc**, &c. See vol. ii. of *White's Farriery*.

LINSEED, or **FLAX-SEED**. An excellent emollient drink is made by pouring two quarts of boiling water on four ounces of linseed, and suffering it to stand in a warm place for three or four hours. It is a useful drink in inflammation or irritability of the bladder. The seeds afford by pressure *linseed oil*, which is sometimes used in pectoral drinks: it is given also as a laxative. After the oil has been pressed out, there remains a cake, which, when powdered, is called *linseed powder* or *meal*, and is commonly employed in making poultices. Oil cake is sometimes used for fattening cattle.

LINT. A soft woolly substance, made by scraping old linen, and employed in surgery to dress wounds, &c.

LIQUORICE. The root of liquorice, dried and powdered, was formerly much used by farriers in their drenches. The powder, commonly sold under the name of **Liquorice Powder**, appears to consist chiefly of pea flour sweetened with sugar, and is perhaps just as good as the genuine powder. Extract of liquorice-root, or, as it is more commonly named, **Spanish Juice**, is sometimes used in pectoral balls and drenches.

LITHARGE. Oxide of lead. This is used in making **Goulard's extract** and **diachylon plaster**.

LITHONTRIPTICS. Medicines that are supposed to cure stone and gravel are thus named.

LITHOTOMY. Cutting for the stone, or the operation for removing a stone from the bladder.

LIVER. An important organ of the body, too well known to require a particular description. Its principal use is to secrete, or separate from the blood, bile or gall. In the horse it is divided first into two large parts or **Lobes**, which are subdivided into seven or eight portions named **Lobules**. The right lobe of the liver is the largest; hence the gland is said to be situated on the right side. The convex surface of the liver is attached by productions of the peritoneum and cellular membrane to the diaphragm; the other surface is concave, and in contact with the intestines and stomach. When the bile or gall has been secreted, or formed in and by the liver, it is conveyed

LIX—LOC

by numerous small tubes into the larger one in which they terminate: this is named the Hepatic or Biliary Duct. In the human body, and in most quadrupeds, there is another duct branching off from this, which terminates in a gall-bladder, from which the bile is occasionally expelled; but in the horse there is simply one duct, which conveys the bile into the first intestine or duodenum, where it assists perhaps in the process of chylication, and afterwards in the expulsion of the useless part of the food.

LIXIVIUM OF POTASH or SODA. A saturated solution of carbonate of potash or soda in water. It may be made so strong, by means of lime, as to become caustic.

LOBE. A lap or flap. A portion of the lungs or liver is thus named.

LOCKED JAW. This disease is sometimes produced by wounds of the foot or other parts, or by the operation of docking, nicking, or castration, particularly in warm climates. It begins generally with a difficulty in mastication, and stiffness of the muscles of the throat, which gradually extends to the neck: at length the jaws become nearly and sometimes quite closed. There is something very peculiar in the animal's appearance: the ears and tail are cocked, the belly and flanks are drawn up, there is a stiffness in the limbs, the muscles of the neck are generally affected, and sometimes those of the eye: the pulse, in the early stage, is seldom altered. Very few cases, I believe, have been cured: I have succeeded once only, though many cases have been under my care. The remedy in that case was opium and camphor in large doses, and blistering the spine of the back from the withers to the tail. Hot and cold bathing have proved ineffectual after a fair trial: bleeding, even so as to make the animal faint, has been tried with a similar result. Some authors advise rubbing the jaws and throat with stimulating liniments. Gibson recommends continual rubbing of the head, neck, and cheeks, or wherever the stiffness may appear, until the horse is relieved. He also observes, that locked jaw sometimes proceeds from the irritation of botts in the stomach, in which case he directs half an ounce of calomel to be given

LOO.

at one dose. He relates a case in which half an ounce of solid opium was dissolved, and given as a clyster, by which the horse was soon relieved. One case of locked jaw was cured by turning a horse out during a very cold winter night. When the disease appears to depend on a wound in the foot, either from a prick in shoeing or stepping on a nail, the part should be laid open with a drawing knife, and the actual cautery applied. As long as the horse is capable of swallowing, wheat-flour gruel should be frequently given.

Loo, Low, or LORE; also named *Foul in the Foot*. Cattle, in travelling, are sometimes attacked with inflammation in one or both fore feet, especially when they are of a full gross habit of body. The pain and inflammation are sometimes so considerable as to cause fever, and swelling of the whole limb; at others it is more confined and moderate, not extending farther than the coronet, or parts immediately above the hoof. Local bleeding is the first remedy, especially when the inflammation is considerable; and this is done either by paring away the horn at the bottom of the claw, and opening the blood-vessels freely with a small drawing knife, or by opening the artery which passes down on the outside of, but rather behind, each claw. When the foot is much inflamed, the pulsation or throbbing of these arteries may be felt, as well as that of the main artery or trunk, which passes down in the centre, on the back part of the two claws. There is a vein on the fore part of the foot, immediately above the division of the claws, which may be punctured; but opening the arteries is more effectual. When sufficient blood cannot be obtained from the foot (for it is of no use to take off less than four or five quarts), the animal should be bled from the neck. After this has been done, a dose of Epsom salts should be given, and the foot be wrapped up in an emollient poultice. In violent cases, the swelling of the foot sometimes breaks, and a slough or core comes out, after which the pain and inflammation abate, and a cure is soon accomplished by dressing with digestive ointment. The loo, or foul in the foot, is sometimes superficial, and not attended with the pain, swelling, and inflammation before described.

LUC—LUM

This kind of disease resembles the foot-rot in sheep, and is readily cured by mild caustics, before applying which it is necessary to scrape or rub the dead surface, or to pare away a little horn, so as to expose all the diseased parts to the action of the caustic, which, if properly applied, seldom requires to be repeated, or not oftener than once or twice. The caustics commonly employed are, butter of antimony (muriate of antimony), and spirit of salt (muriatic acid). If these fail, a solution of blue vitriol in spirit of salt may be used ; if necessary, a little nitrous acid may be added to it. It is a common practice to draw a piece of tar cord, or a hair-rope, to and fro between the claws, in order to lay bare all the diseased parts before the caustic is applied. Sometimes, upon examining the foot, sinuses, or pipes, are found running in different directions. These should be cored out with sublimes, as in the quittor of horses. (See *Quittor*.) The loo, when neglected for some time, and in bad habits or constitutions, becomes extremely obstinate, and appears to approach to the nature of canker in horses. Whether this depends simply upon the disease having extended through neglect to the ligaments and bone of the foot, and rendered those parts carious, or upon some peculiar morbid action or humour, is uncertain ; in such cases, the diseased parts should be freely exposed, though it be necessary to cut away all the horn of the claw for the purpose, and then a few caustic dressings, succeeded by digestive applications, will probably accomplish a cure.

LUCERNE. One of the artificial grasses, and excellent food for soiling for horses or cattle. It is much used in France as food for milch cows, but must be given with moderation, as cattle are very fond of it, and, if permitted, generally eat so voraciously of it as to blast themselves. (See *Blasting*.) The same caution is necessary with respect to horses.

LUMBAR MUSCLES. Muscles of the loins within the body, and immediately over the kidneys. There are two pair, the *Psoæ*, and *Iliaci Interni*. These muscles are sometimes injured in violent exertions, and the kid-

LUN

neys often participate in the injury. See *Strains of the Back*.

LUNAR CAUSTIC. Nitrate of silver. A very convenient and efficacious caustic.

LUNGS, or *Lights*. The principal organs of respiration or breathing. The air is squeezed out of the lungs by the pressure of the muscles of respiration, and, when these relax, the lungs expand by their elasticity. This may be exemplified by means of a sponge, which may be compressed into a small bulk by the hand, but, upon opening the hand, the sponge returns to its original size, by virtue of its elasticity, and all its cavities become filled with air. The lungs perform an important office in the animal economy, serving to renovate the blood after it has circulated through the body. Whether this be effected by the oxygen of the atmospheric air being absorbed by the blood, or by the oxygen abstracting from the blood carbon and hydrogen, and forming, with these elements, carbonic acid gas and aqueous vapour, it is of little importance to determine. Certain it is, that this change in the blood is of vital importance, and indispensably necessary to a due performance of all the other functions of the body. When the lungs and muscles connected with them are healthy and vigorous, a horse is said to be in good wind; a very desirable state for an animal to be in, whose usefulness depends upon his being capable of a long continuance of quick motion, or other considerable exertion. Nothing is more common, however, than a want of health and vigour in the horse's organs of respiration, owing almost entirely to bad management with respect to feeding and exercise, and to premature and immoderate work. In describing the lungs, it is necessary to begin with the trachea or windpipe, which, descending along the fore part of the throat and neck, enters the chest between the first two ribs, and then gradually ramifying like a tree into numerous branches, terminates at length in small membranous cells. The upper part of the windpipe or larynx has been already noticed (see *Larynx*), but the pipe is composed of circular rings of cartilage or gristle, which

LUNGS.

towards the back part become very thin and almost membranous. These cartilaginous rings are connected by strong membranes, by which contrivance the windpipe is enabled to accommodate itself to the various motions of the head and neck. At its entrance into the chest it is divided into two principal branches, called its bronchiæ, which are afterwards subdivided into innumerable other branches, the extremities of which compose an infinite quantity of small cells or air bladders; which, with the ramifications of the veins, arteries, nerves, lymphatics, and the connecting cellular membrane, make up the whole mass or substance of the lungs. The internal surface of the windpipe and its branches is lined with a membrane, which secretes a mucous fluid; when this fluid becomes abundant, it is expelled by coughing. There is also a considerable quantity of watery vapour discharged by the lungs. The whole is invested with a thin transparent membrane named *Pleura*; the same membrane lines the internal surface of the ribs and diaphragm, and by a duplicature it makes, which stretches across from the back to the breast bone, forms a partition between the two lungs; this is called *Mediastinum*. The lungs are subject to various diseases, which are noticed in their respective places. See *Peripneumony*, *Pleurisy*, *Broken Wind*, *Cough*, *Catarrh*, *Consumption*, and *Glanders*.

Lungs, Inflamed, or Peripneumony. It has been justly observed by Mr. Blaine, that "this disease has been very much mistaken among farriers, which has added much to its fatality; and if no greater improvements had been gained to the art than in the knowledge of the causes, effects, and mode of treatment of this disease alone, still the founders of these improvements would have been eminently useful, and deserved well of the community." It does not appear necessary to notice the various causes by which this disease may be produced; it will be sufficient to mention those, a knowledge of which may tend to its prevention; viz. a sudden transition from heat to cold, or the contrary; exposing a horse, when over-heated by exercise, to rain or cold winds; or allowing him to drink freely of cold water when in that

LUNGS.

state ; taking a horse from grass, and putting him suddenly into warm stables where many horses are kept, especially if he is at the same time fed freely with oats : excessive exertion may also be reckoned among the causes of peripneumony, which may, or rather ought to be avoided. Before the more distinguishing symptoms of peripneumony take place, the horse is observed to look dull, hang down his head, and be indifferent about his food, or refuse it altogether. There is a quickness of breathing, which is indicated by the working of the flanks and nostrils ; and the inner surface of the eyelids is unusually red. The pulse, which in health is about forty in a minute, will be found from eighty to a hundred. If the disease is not properly treated, these symptoms, particularly the motion of the flanks and quickness of the pulse, will of course increase, and the progress of the disorder is sometimes so rapid, that, unless relief be afforded the first or second day, it becomes incurable. Bleeding is universally allowed by veterinary authors to be the grand remedy for this disorder ; but there is some difference in their opinions with respect to the quantity of blood that ought to be taken off. Gibson says, that “ a *strong* horse may, in the beginning of the disease, lose *three quarts* at once ; and that on the next day, if the symptoms continue violent, *two quarts* more may be taken from him ; but if he be old, or have had any previous weakness, the best way is to bleed often, but take off a less quantity at a time. In such cases a horse may lose a quart in the morning and the same quantity in the afternoon, which may be repeated the next day, and longer if the symptoms so require.” I do not hesitate to say that this mode of treatment is ineffectual, but sometimes flattering ; for though the inflammation may be retarded, it is seldom, if ever, eventually cured by it ; most commonly, by such treatment, an effusion of serum into the cavity of the chest takes place, by which the animal's life may, perhaps, be protracted a few days. Mr. Blaine says, “ as a general rule it may be remembered bleeding is never to be continued longer than it raises the pulse ; but so long as it does this, it is proper and should be continued.” This I believe

LUNGS.

is a fallacious guide. Bleeding, according to my experience, when carried to a sufficient extent, makes the pulse quicker and weaker. When called in at an early period of this disease, one bleeding will often arrest the progress of the inflammation, if carried so far as to produce this alteration in the pulse, with an appearance of approaching faintness about the eyes. The blood should always be preserved for examination; for if it be found sizzly (see *Blood* and *Buff*), it indicates the propriety of the operation, and that it should be repeated in a few hours, if a continuance of the symptoms render it necessary. According to Mr. Feron, "five or six quarts of blood should be taken at once." We must endeavour also, he says, to bring on external irritation on each side of the chest and legs; by blistering or firing on the region of the lungs, and introducing a rowel in the chest and belly; the legs are to be well stimulated, he says, with oil of turpentine. Should there be any appearance of costiveness, a clyster and a dose of laxative medicine are to be given; afterwards the following ball, twice a day:

Nitre, six drams.

Tartarized antimony, two drams.

Flour and syrup enough to form a ball.

Should the balls bring on profuse staling, they are to be discontinued for a day or two. The horse should be turned loose into a tolerably warm place, and where he is not exposed to a current of air. In summer he may be allowed grass, vetches, or other green food; moderately warm clothing is proper. When the horse appears to be getting better, he should have oatmeal gruel, or infusion of malt. Inflammation of the lungs seems to begin sometimes in the mucous membrane lining the throat, the windpipe, and its branches. In this case there is a cough, watery eyes, a discharge from the nostrils; and the pulse and breathing are not so quick as in the former disease. Here also *early* bleeding is the essential remedy; and when assisted by good nursing, steaming the head, which should be clothed as well as the body, and giving the nitre balls prescribed above, the complaint is generally removed in a short time. (See

LUX—LYM

vol. i. and vol. iii. of the author's *Farriery*.) The diseases of the lungs and parts connected with them are, Catarrh, Cough, Roaring, Asthma or Broken Wind, Pleurisy, Peripneumony, and Tubercles. In violent attacks of strangles the breathing is sometimes so obstructed as to render an opening in the windpipe necessary. Inflammation of the lungs is named Peripneumony, and inflammation of its investing membrane, the pleura, is called Pleurisy. Inflammation of the mucous membrane which lines the windpipe and its branches, and appears to be continuous with that of the throat and nostrils, is denominated Catarrh, Quinsy, Catarrhal Fever, Distemper, Epidemic Catarrh, and Influenza; according to the extent or violence of the symptoms. Each of these diseases of the lungs, and parts connected with them, is treated of under its respective name.

LUXATION. A partial displacement of the bones forming a joint.

LYMPH. A limpid fluid found in certain small vessels named *Lymphatics*.

LYMPH, COAGULABLE. That part of the blood which, after it has been drawn from the body a short time, coagulates, that is, becomes solid, like jelly. When blood is drawn from an animal labouring under an inflammatory disorder, a considerable portion of the coagulable lymph is found on the surface free from the red colouring parts, and is then of a light buff colour. This is named buff or size, and is always considered as an indication of inflammatory disorder in the body. The cause of this appearance is, that the red colouring matter of the blood being heavier than the coagulable lymph, and inflamed blood continuing fluid much longer than healthy blood, the colouring parts separate, and fall to the bottom of the vessel containing the blood. When the coagulable lymph is completely separated from the other parts by washing, it is nearly white, and is named *fibrine*, being considered as the basis of muscular fibre. It is probable, however, that all the solids of the body are formed from the coagulable lymph. See *Blood* and *Bleeding*.

LYMPHATICS. Lymphatic vessels, lymphatic ab-

MAC—MAL

sorbents, or lymphatic veins. Small vessels, containing a limpid fluid like water, and found in all parts of the body. With the lacteals, they form what is termed the absorbent system. Their termination is in the thoracic duct. (See *Lacteals* and *Thoracic Duct*.) The office of these vessels is to take up substances that are applied to their mouths; thus the moisture within the abdomen and other cavities, and that in the cellular membrane, are removed by the lymphatics of those parts; and thus mercury and other substances are taken into the system when rubbed on the skin. The absorbents are likewise supposed to possess the property of absorbing all the useless parts of the body, whether solid or fluid, and conveying them into the blood, that they may be thrown off by the emunctories (such as the skin and kidneys), with the urine and perspiration.

M.

MACE. Cordial and stimulant, but inferior to the other spices, and seldom employed in medicine.

MACERATION, implies the soaking or steeping any substance in water or other fluids for a considerable time, so as to soften, dissolve, or separate it from some other parts with which it is combined.

MADNESS. Rabies; hydrophobia. See *Hydrophobia*.

MAGNESIA. Calcined magnesia and the common carbonate of magnesia may be usefully employed as an absorbent or antacid in diseases which depend upon a morbid acidity in the stomach. Chalk, or carbonate of lime, is generally preferred on account of its cheapness.

MALLENDERS. A scurfy kind of eruption on the back part or bend of the knee joint. After clipping off the hair, and washing the part well with soap and warm water, some mild astringent ointment should be applied twice a day; such as common wax ointment or lard, mixed with Goulard's extract or sugar of lead. In obstinate cases some stronger application may be necessary; as the following:

Take, of Sublimate, ten grains.

Mercurial ointment, one ounce.—Mix.

MALLOWS. There are several species of this plant,

MAN

all of which, from being of a mucilaginous nature, are employed in making emollient fomentations and demulcent drinks.

MANÈGE. The riding-school, where horses are educated, and the art of horsemanship taught. The term is used also for the equestrian art itself, which comprehends the art of breaking horses, as well as that of riding.

MANGE. A disease of the skin, which causes a horse to be perpetually biting or rubbing himself. It appears in a loss of hair, and small scabby eruptions, generally about the main, the head, or back part of the tail; but sometimes on all parts of the body. When a mangy part is rubbed, the horse expresses by his countenance, or rather by the motion of his lips, the greatest satisfaction and pleasure; and by this circumstance it may be known whether the disease has ceased or not after the remedies have been applied. The mange is generally produced by poverty and negligence; but being contagious, often attacks horses that are well treated, and in good condition. When mange arises from the former cause, the first step towards a cure must be sufficiently obvious; then let a dose of mild physic be given, and the following ointment applied:

Take, Oil of turpentine, four ounces.

Strongest sulphuric acid, by measure, one ounce.

—Mix carefully, in a vessel large enough to contain four or five times the quantity, adding the acid by a little at a time.

The mixture should be made in the open air, or under a chimney, that the suffocating vapours which arise may be avoided. When the acid is poured on the turpentine, if the former be sufficiently strong, an effervescence, or rather boiling, will take place, which may be promoted at first by stirring the mixture. When the boiling has ceased, add, of

Melted hog's lard, eight ounces.

Common oil, four ounces.

Sulphur vivum, *finely* powdered, six ounces.—

Continue to stir the mixture until it is cold.

Previous to the application of this ointment, the mangy

MANGE.

parts, or wherever the horse may feel an itching, are to be well rubbed with an old blunt currycomb, by which means the diseased surface will be completely exposed, and the hair removed from such places as would otherwise have escaped notice. The ointment is then to be well rubbed in, and repeated for three or four days, unless the parts become too sore to bear it. Let the following powder be given in a mixture of bran and corn twice a day :

Levigated antimony, one ounce.

Calomel, fifteen grains.—Mix.

In obstinate cases, sublimate has been given with advantage, mixed with tartarized antimony, as in the following formula :

Corrosive sublimate, from ten to fifteen grains.

Tartarized antimony, two drams.

Ginger, one or two drams.

Powdered caraway-seeds and syrup, enough to form the ball.

In slight cases of mange, or where the smell of the ointment is objected to, washing the parts with a solution of sublimate has effected a cure. See *Corrosive Sublimate*, also vol. ii. of the author's *Farriery, or Materia Medica*.

Cattle, sheep, and dogs, are also subject to mange. In the former, it generally arises from want of cleanliness and poor keep. It is commonly called by herdsmen the Scab or Scurf. The disease is incident to sheep in some particular pastures, situations, and seasons, more than in others. It seems to be generally produced by poverty and leanness; but, from its contagious nature, will also attack such as are fat. Dogs are exceedingly subject to mange, and readily catch it from each other. The ointment above prescribed will be found as effectual in these animals as in horses, and the same general treatment is applicable to them. In sheep, the matter discharged mixes with the wool, and drying, forms a hard impenetrable crust, which must be completely removed by soaking and scraping before any application can be effectual. The following has been recommended for the scab in sheep.

MAN—MAS

Corrosive sublimate, one dram.

Crude sal ammoniac, half an ounce.

Tobacco water, one pint.—Mix.

A solution of arsenic and potash in water has also been found effectual. A considerable quantity of an arsenical ore was, a few years ago, sold as sulphur vivum, by a London wholesale druggist, in various places. As long as it was used as an external application for the mangy complaints of cattle, its real nature was not discovered. At length, an unfortunate person at Sidmouth, in Devonshire, was advised to take sulphur vivum in order to cure the itch; some of this arsenical ore was sold to him as such by a druggist of the town, and taken by the man, his wife, and his child; they all died soon after, and it was then discovered, that the supposed sulphur vivum consisted in a great measure of arsenic. There is a variety of mange in dogs called the Red Mange, from the red appearance of the skin that is affected; this is said to be cured by mercurial ointment.

MANGER. A manger should be deeper and wider than they commonly are, and the corn should always be spread thin over the bottom, as greedy horses will take more into the mouth than they can masticate when they are put in a heap, and swallow a great deal of corn unchewed, which is both wasteful and injurious to the stomach.

MARASMUS. A decay or wasting of the whole body. Turn the horse into some good pasture, where he may find shelter from the rain. When this cannot be done, give a dose of mild mercurial physic, and feed afterwards with small quantities of the most nutritious aliment, keeping the animal loose in a large box. Alterative medicines may sometimes do good in this complaint.

MARSHMALLOWS. A plant used for making emollient drinks and fomentations.

MARTIAL. A term applied to some preparations of iron.

MASH. A mash is made by pouring boiling water on fresh, sweet bran, then covering the pail, and letting it stand until sufficiently cool for use. Mashies are sometimes made of ground malt; in this case the water

MAS

must not be boiling hot, but just of a scalding heat. Bran mashes are excellent food for sick and convalescent horses, and for such as have not sufficient exercise to keep them in health. There is a kind of bran named Pollard or Gurgings, which contains some proportion of flour, and is therefore much more nutritious than common bran; the latter, however, is preferable in some cases, on account of its laxative quality.

MASSAL, or MASSAUL. An Indian name for cordial balls.

MASSETER. The name of the great muscle of the cheek, by which mastication is performed.

MASSICOT. A preparation of lead, of little or no use in veterinary medicine.

MASTICATION, or CHEWING. This is a subject of some importance, as there are frequently in horses sharp projecting points on the outside of the upper grinding, and sometimes, but much less frequently, on the inside of the under grinding teeth, by which mastication is rendered painful and difficult; so that the food is imperfectly chewed, and therefore difficult of digestion. This is injurious to the stomach and bowels, and consequently to the general health of the animal; it occasions also a considerable waste of provender. Oats, when taken into the stomach unbroken, are indigestible, and pass through the bowels unchanged, except in being softened and swollen. When a considerable quantity of oats are swallowed in this state they often cause flatulent colic: and I have seen many cases of such colic terminate in a fatal inflammation of the bowels. When the grinding teeth are in this state they should be filed; for which purpose a concave file or rasp is generally used. Mastication is sometimes rendered painful by swelling and inflammation within the mouth, especially at those periods of dentition when the anterior grinding teeth are changing. In all cases of painful and difficult mastication soft food should be given, such as bran-mashes containing bruised oats, barley softened by steeping in hot water, or a moderate quantity of fresh grains. When hay is imperfectly masticated, another evil, besides those already mentioned, may, after some time,

MAS—MAX

result from it, and that is, difficulty in swallowing, and at length paralysis of the muscles of deglutition. Such horses are termed *quidders*, and generally die of starvation.

MASTIGADOUR. *Masticator* or *Masticatory*. A kind of medicated bit, which is placed in the horse's mouth to stimulate the salivary glands, and cause an increased flow of saliva. French and Italian practitioners used to employ it in fevers, or to excite an appetite; but it is never used, I believe, in this country. A late writer on epidemic catarrh (Mr. Wilkinson) has recommended a chewing ball being put between the grinders, in cases where there is pain and difficulty in swallowing.

MATERIA MEDICA. A catalogue and description of the various articles used in medicine. The first veterinary materia medica deserving of notice, was published by that eminent French veterinarian, Bourgelat, in two octavo volumes; after which, a surgeon of this country, Mr. Bartlet, published a veterinary materia medica; and a few years ago, I ventured upon the same ground. My little book, entitled *Veterinary Materia Medica and Pharmacopeia*, or vol. ii. of my *Farriery*, has been so favourably received that a new edition of it will shortly be published.

MATTERING OF THE YARD. Stallions sometimes have a discharge from the urethra, attended, in some severe cases, with considerable inflammation, and even ulceration. When much inflamed, bleed the animal, give him some opening medicine, and keep him on grass or bran mash. Foment the part with water, or some emollient decoction; and, when there are ulcers, touch them with lunar caustic, or wash them with a solution of blue vitriol.

In the sixth volume of "*Instructions et Observations sur les Maladies des Animaux domestiques*, par M. M. Chabert, Flandrin et Huzard," a case of this kind is described, which, after resisting various modes of treatment for eight months, was cured by the application of the actual cautery to the perinæum, from the anus to the sheath and buttocks.

MAXILLA. The jaw.

MAXILLARY, belonging to the jaw; as the maxillary

MEA—MEL

arteries and glands. The glands under the jaw are named sub-maxillary glands.

MEASURES. Liquid medicines are generally prescribed by measure, and, what was formerly a drop, is now a minim. For this purpose graduated glass measures are made.

LIQUID MEASURE.

Sixty minims make one dram.

Eight drams one ounce.

Sixteen ounces one pint.

DRY MEASURE.

Twenty grains make one scruple.

Three scruples one dram.

Eight drams one ounce.

Twelve ounces one pound.

Druggists buy by avoirdupois weight, in which there are sixteen ounces to the pound ; and if they make up a veterinary recipe (especially country druggists), they use sometimes troy, and sometimes avoirdupois weight. This occasions some inaccuracy in compounding veterinary prescriptions, but not of any serious kind. A horse's allowance of food is regulated by the Winchester measure ; and in speaking of the weight of forage, or of a burden, the gross weight, that is, fourteen pounds to the stone, and one hundred and twelve to the hundred-weight is meant. The Winchester measure has two gallons to the peck, four pecks to the bushel, four bushels to the sack, and two sacks to the quarter.

MECONIUM. The inspissated juice or extract of the white poppy. A syrup made from the extract, or from a decoction of white poppy heads, is named syrup of meconium, and diacodium. The excrementitious matter found in the bowels of the foetus has also been named *meconium*.

MEDIASTINUM. A duplicature of the membrane named pleura, by which the cavity of the chest is divided into two parts.

MEDULLA OBLONGATA. The beginning of the spinal marrow within the cranium.

MELILOT. This plant is sometimes used in making clysters.

MEM—MES

MEMBRANE. Thin elastic coverings or linings to various parts of the body, many of which have some distinctive appellation affixed to them, are called membranes. That which covers the lungs, for example, is named *pleura*, and that which covers the bowels *peritoneum*. The membrane of cartilages is named *perichondrium*, and that of bones, *periosteum*. The membranes of the body are generally divided into five kinds or species; viz. serous, mucous, adipose, synovial, and cellular. The serous membranes secrete a limpid fluid like water, but containing a small quantity of saline matter; of this kind are the *pleura* and *peritonæum*. The mucous membranes secrete a mucous fluid; of this kind are the membranes which line the windpipe and its branches, and that which lines the bowels inwardly. The adipose membrane secretes the fat of the body. The synovial membrane is found in the joints, and on certain tendons, and secretes *synovia* or joint oil, and the cellular membrane, or tissue, is the common connecting substance of most parts of the body. It likewise constitutes the bed for the origin of the absorbents.

MERCURY, quicksilver. Many useful medicines are made from this metal, viz. blue pill or mercurial pill, mercury with chalk, black sulphuret of mercury, or Ethiop's mineral; red sulphuret of mercury, or cinnabar; submuriate of mercury, or calomel; oxy-muriate of mercury, or corrosive sublimate; red oxide of mercury, or calcined mercury; nitric oxide of mercury, or red precipitate; precipitated submuriate of mercury, or white precipitate; subsulphate of mercury, or turpeth mineral; acetate of mercury; mercurial ointment; ointment of nitrated mercury, or citrine ointment; and ointment of nitric oxide of mercury, or ointment of red precipitate.

MESENTERY. A thin membrane by which the bowels are held together, and over which the lacteals or chyle vessels pass. The portion of the mesentery to which the colon is attached is named **MESOCOLON**. Besides the chyle vessels, there are considerable veins and arteries passing over the mesentery. The arteries

MES—MIL

are distributed to the bowels, and the veins terminate in the *vena portæ*, or great vein of the liver.

MESOCOLON. See *Mesentery*.

METACARPUS. The *metacarpus* of the horse consists of one great bone, commonly named the canon, shank-bone, or fore leg, and two small bones, or splent bones, attached by elastic ligaments to the back part of the canon bone, rather towards the sides. The suspensory ligament passes down on the back part of the canon bone and between the two splent bones. The bony excrescence or swelling, named a splent, is supposed to arise from an inflammation of the ligament which joints the splent to the canon bone, generally spreading to the periosteum of the canon. (See *Splents*.) The flexor tendons, or back sinews, pass down over the suspensory ligament; and, in well-bred horses, both the ligaments and tendons may be distinctly seen in the living animal. This is a *point* much looked at in horses. When the bones only of the fore leg are spoken of, they are called the metacarpal bones; but the whole leg is named metacarpus. It begins at the knee, and ends at the fetlock joint.

METASTASIS. A translation of a disease from one situation to another.

METATARSUS. The hind leg between the hock and the fetlock joints.

METATARSAL BONES. The hind canon, or shank bone, with the two small splent bones attached to it. The large blood-vessels and nerves in this situation are also named metatarsal.

MEZEREON. The bark of mezereon root is of an acrid nature, and has therefore been employed in making issues or rowels.

MIASMA. Poisonous effluvia, such as that arising from some species of fever.

MIDRIFF. See *Diaphragm*.

MILK. Milk is commonly supposed to be secreted from the blood by the udder or mammary glands; but it appears more probable that it is formed in the stomach, is nothing more than chyle, and is conveyed to the udder by appropriate vessels independent of the circulation. (See *Udder*.) When young animals are

MIN—MOL

brought up by hand, as it is termed; that is, when they are taken from the mother before the usual period, and fed with milk by the hand; that milk should be fresh drawn from the cow, otherwise it is apt to disagree with the stomach, and cause indigestion and flatulence. Milk will also disagree with the stomach of the young animal when the mother's stomach is disordered, or when she feeds on unwholesome or indigestible food.

MINDERING. In some parts of Mendip, where lead ore is smelted, horses and cattle have at times been attacked with a disease which generally proves fatal. Such animals are said to be mindered or moindered, and the disease is named mindering, or moinding. Some of the meadows at Workey Hole near Wells, through which a rivulet passes, are sometimes so impregnated with lead, as to produce this disorder in the animals that graze in them. This happens when the hill has been washed by very heavy rain, at which times the meadows are generally overflowed, and when the water has retired, the poisonous quality already noticed, is observed in them. Cattle have been mindered also by grazing near the places where the lead ore is smelted. I have never met with any case of this kind; but, upon inquiry, find reason to believe that such accidents have often happened. At the same time I have no doubt that many animals that have been said to die from this cause have really died of some other disorder. See vol. iii. of *White's Farriery*.

MINIM. A drop. See *Measures*.

MINIUM. Red oxide of lead. Red lead. This is sometimes used in the preparation of plasters.

MISLETOE. A parasitical plant found on various trees; that of the oak was formerly used in medicine as a tonic, but is now fallen into disuse.

MITHRIDATE. A favourite medicine with farriers, composed of *forty-two* ingredients in its improved and *abridged* form in Quincy's Dispensatory. The London college have substituted for this the Opiate Confection.

MOINDERING. See *Minding*.

MOLARES. The name of the grinding teeth.

MOLTEN GREASE. "This disease," says Mr. Blaine

MOLTEN GREASE.

(which he names Dysentery), "the *gras fondu* of the French, is in itself one of the strongest proofs of the pitiable state in which veterinary medicine has been plunged till this period. Bartlet, who was educated a surgeon, and should have known better, says, 'by molten grease is meant a fat or oily discharge with the dung, and it arises from a colliquation or melting down of the fat of a horse's body, by violent exercise in very hot weather.' Bracken, Gibson, and some later writers, have held the same opinion." I perfectly agree with Mr. Blaine as to the absurdity of Bartlet's theory or explanation of the disease, but do not think he is correct in stating, that it is as likely to happen to a horse with little fat as one that has much; nor do I think that it resembles the dysentery of the human subject. Molten grease is commonly produced by violent or long-continued exertion when a horse is not prepared for it. Horses that are fat and unaccustomed to exercise, or such as have been recently taken from grass, are most liable to it. Molten grease is, in fact, only a symptom, which sometimes attends inflammatory fever or general inflammation. According to Gibson, "molten grease is always accompanied with a fever, with heat, restlessness, starting tremors or tremblings, great inward sickness, shortness of breath, and sometimes with the *symptoms of pleurisy*; and these symptoms are more or less aggravated according to the previous state of the horse, or the degree of violence in the treatment he has met with. His dung will then be extremely greasy; and he will fall into a scouring, not unlike the greasy diarrhoeas that happen to men in somewhat of the like circumstances." When a horse is attacked with inflammatory fever, the symptoms are not always the same, but vary according to the part that happens to be most affected, and the violence of the disorder. Thus, in inflammatory fever, there may be either inflammation of the lungs, of the bowels, or of the urinary organs; or it may be attended with that peculiar affection of the mucous membrane of the bowels, which constitutes molten grease. Plentiful bleeding, which may be repeated after a few hours, should it appear necessary, is the first and most important remedy for this disorder.

MOO—MOR

If there be griping pains, and if the dung be voided in small, slimy knobs, give a pint of castor oil; but if the bowels are loose, and the dung of that greasy appearance before described, let the horse take frequently some decoction of linseed, oatmeal gruel, or gruel made with arrow-root. When a horse has recovered from this disease, there may remain a tendency to costiveness, which should be counteracted by bran mash or green food. See *Fever*.

MOON BLINDNESS. In speaking of the diseases of the eye, it has been observed, that Ophthalmia, or inflammation of the conjunctive membrane and cornea, often comes on rather suddenly, and after continuing for some time, by the application of proper remedies, is generally removed; most commonly, however, after a short period the disease returns. In this fluctuating state it may remain a considerable time before a cataract or incurable blindness takes place. From this periodical appearance of the disease, it has been supposed that it follows the changes of the moon, and has therefore been named Moon Blindness. See *Eye*.

MOOR-EVIL. A disorder that often occurred in the low open country about Wedmore, in Somersetshire, and other similar situations, before those places were inclosed and drained. It consisted in dropsical swellings about the belly, chest, &c., and often terminated fatally. A drench, composed of wormwood boiled in ale, and mixed with grains of paradise, long pepper, and Castile soap, was found the most effectual remedy. (See *Dropsy*.) This drench was given fasting, and the horse was exercised immediately after until he sweated.

MORTIFICATION. By this term is meant the loss of vitality in any part of the body, in consequence of excessive inflammation or some violent injury. Mortification of the lungs, bowels, or other internal parts, is not an unfrequent occurrence, and in deep and extensive lacerated wounds, particularly when improperly treated, mortification sometimes ensues. Internal mortification is always fatal; but when it happens externally, the mortified or dead part sometimes separates from the adjacent living parts, and the animal often recovers; however, in very severe injuries there is sometimes so

MOU

much sympathetic fever produced, that the animal becomes exhausted by the excessive irritation, and sinks under the disease.

MOULTING. A change generally takes place in a horse's coat in the spring and autumn. In the spring the old coat is shed, or thrown off, and the horse gradually improves in spirit and in appearance; but during the change, he is weaker and more liable to catch cold than at other times. In the autumn, that is about the latter end of September or the beginning of October, the coat becomes longer and coarser, and loses its healthy gloss: at the same time the horse becomes weak, sweats readily upon moderate exercise, and is often incapable of performing his usual labour. This is more especially the case with horses that have been hard worked and badly fed. At both these periods it is necessary to take particular care of horses, and work them very moderately. Post and coach-horses require the best food, and are often greatly benefited by barley that has been boiled, or soaked for a day and night in water. During the autumnal change, feeding on new or musty oats or hay, often does the most serious mischief. Cordial and diuretic medicines are often given at this period to improve the coat and remove the swelling of the legs, which often accompanies moulting: but this will not compensate for the want of nutritious food, wholesome stables, and moderate work. Carrots are excellent food at this time of the year; and potatoes have also been given with good effect. A horse, when moulting, should not be exposed to a draft or current of air, but kept in a well ventilated stable: warm clothing is improper. During the spring moulting, horses are very liable to inflammatory and catarrhal disorders; and during the autumnal change, to swelling of the legs, coughs, farcy, and general debility: more horses die during this period than at any other time. In the spring, there is often occasion for bleeding, mashes, and cooling medicine; but in the autumn, wholesome food, good grooming, and only moderate labour, are the chief requisites.

MOURNING OF THE CHINE. A name given by ancient farriers to the glanders.

MOU→MUR

MOUTH, diseases of. See *Lampās*, *Barbs* or *Paps*, *Giggs*, *Teeth*, and *Mastication*.

MUCILAGE. A solution of gum or any thing that partakes of the nature of gum. Gummy or mucilaginous drinks are useful in internal diseases: the cheapest is an infusion or decoction of linseed or marshmallows; but the best, perhaps, is a solution of gum arabic.

MUCOUS MEMBRANES. The internal surface of the windpipe and its branches, and the internal surface of the bowels are lined with a membrane which secretes a mucous fluid, and are therefore named mucous membranes or mucous surfaces.

MUCOUS. Many of the secretions of the body are of a mucous nature; for instance, that of the bowels.

MUCUS. A fluid secreted by mucous surfaces. It somewhat resembles pus in appearance, and may be distinguished from it by its floating in water, whereas pus sinks.

MUGWORT. A slightly bitter plant, seldom used in medicine.

MURIATES. Salts composed of muriatic acid and some alkali, earth, or metallic oxide. Common salt, for example, being composed of muriatic acid and an alkali named soda, is called muriate of soda. See vol. ii. of *White's Farriery*.

MURIATIC ACID. This is commonly named spirit of salt. It is sometimes used as a caustic: when united with about half its weight of corrosive sublimate, it forms a very powerful caustic; which, if diluted with water or spirit of wine and water, according to the purpose for which it is wanted, will be found useful on many occasions where caustics or escharotics are required.

MURRAIN, *Pestilence*, *Pest*, *Malignant* or *Pestilential Fever*. This destructive disorder has not appeared in England for a considerable time, nor in any part of Europe since the year 1744. It has been calculated that at that time nineteen out of twenty died of this distemper; and according to Lancisi, there died in the Ecclesiastical States, from October, 1713, to April, 1714, in all, 26,252 head of cattle. Though such dreadful pestilences are not known in the present age, epidemic, or rather epizootic diseases of a less formidable nature

MUS

have occurred; and these are generally of the catarrhal kind. (See *Catarrh*.) With regard to the treatment of pestilential fever, it was the opinion of that celebrated medical professor of Montpellier, Sauvages, (who appears to have been an accurate observer of the disease when it raged with great violence in Europe,) that no remedy had been discovered, nor any effectual mode of prevention, except that of separating the healthy from the sick. He recommends, however, bleeding and purging at the commencement of the disorder, with setons in the dewlap: after the operation of the purgative, cordials and opiates are to be administered. See a "*Treatise on Cattle*," by John Mills," published by J. Johnson.

MUSCLE. The parts that are usually included under this name, consist of distinct portions of flesh, susceptible of contraction and relaxation; the motions of which, in a natural and healthy state, are subject to the will, and for this reason are termed voluntary muscles. Besides these, there are other parts of the body which owe their power of contraction to their muscular fibres: thus the heart is a muscular texture, forming what is called a hollow muscle: and the urinary bladder, stomach, intestines, &c., are enabled to act upon their contents, merely because they are provided with muscular fibres; these are called involuntary muscles, because their motions are not dependent on the will. The muscles of respiration, being in some measure influenced by the will, are said to have a mixed motion. The names by which the voluntary muscles are distinguished, are founded on their size, figure, situation, use, the arrangement of their fibres, or their origin and insertion.

MUSK. A powerful odorous substance, whose medicinal virtues are chiefly antispasmodic. It is a strong perfume.

MUSTARD. Mustard seed, or flour of mustard seed, is a powerful stimulant, and is used as such both internally and externally. The dose, from a teaspoonful to a tablespoonful, mixed with water, or with about four ounces of common salt in a quart of water. Externally, it is employed as a stimulating embrocation mixed with water; sometimes with the addition of olive oil and oil

MUZ—NEC

of turpentine. This embrocation is prescribed by Mr. Wilkinson for locked jaw.

MUZZLE. Horses that have an inordinate appetite, and are disposed to eat their litter, should be muzzled, except at feeding time. Muzzles are useful also for crib-biters. See *Crib-biting*.

MYRRH. A gum-resin of a fragrant smell and bitter taste. It is given internally as a tonic: the dose, one or two drams. There is a simple and a compound tincture of myrrh kept by druggists. The former is made by steeping two ounces of bruised myrrh in one pint of rectified spirit of wine, diluted with half a pint of water: the other, by adding to the simple tincture one ounce of aloës. Tincture of myrrh is sometimes applied to wounds, ulcers, and sinuses.

N.

NAG. A name sometimes applied to road-horses or roadsters, and especially to such as have been docked, in contradistinction to those that have long tails, or are used in harness.

NAILS. Great improvement has been made of late years in the form of the nails used in shoeing, as well as in the manner of driving them. See *Shoeing*.

NARCOTICS. Medicines which stupify, or cause sleepiness. Such of them as relieve pain also are named *Anodynes*, which see.

NARES. The nostrils. See *Nostrils*.

NATRON. A name formerly given to soda or the mineral alkali.

NAUSEA. A slight degree of sickness, not quite sufficient to cause vomiting.

NECK. Although a tolerably long neck is considered ornamental or contributing to the beauty of a horse, yet a short neck possesses advantages which induce some people to give it the preference. Horses that are wanted for speed should have a short light neck and a small head. Those that have a long arched neck are frequently more showy than useful; and those with a short, light, or ewe neck, as it is termed, are often stargazers; that is, are apt to throw up their noses, espe-

NEC—NER

cially when badly broke or injudiciously ridden. It is probable that in this, as in most other things, a medium length of neck is the best. It has been observed, by those who have written expressly upon the proportions of the horse, that the neck should measure, from the top of the head between the ears to its termination in the withers, or to its termination in the chest, one head and thirteen parts, a well-proportioned head being used as a measure for all the other parts of the body, and divided into twenty-two parts. Should the head be too small or too large, another measure is taken, viz. one-third of his height, measured from the withers, as usual.

NECKLACE. See *Cradle*.

NECROSIS. The mortification and separation of a portion of dead bone from the other parts of the bone. It seldom happens to horses or other animals, though not very unfrequent in the human body; especially in the cylindrical and hollow bones, such as those of the leg. In this situation, a new bone generally forms around the old one, which, remaining loose within, acts as an extraneous body, and causes ulceration and sinuses.

NEPHRITICS. Medicines that act upon the kidneys.

NERVING, or, more properly, the nerve operation. An operation discovered by Mr. Sewel, assistant professor of the veterinary college, for the relief of those incurable lamenesses which are so often met with. It consists in cutting out a portion of the nerve which supplies the foot, either just above the fetlock joint, which is named the high operation, or in the pastern, where it is called the low operation. In the former, the sensibility of the foot is entirely, and in the latter, only partially destroyed. In cases where this diminution of the sensibility of the foot is sufficient to render the horse useful, it should always be preferred, as much inconvenience, and even serious mischief, such as the loss of the hoof, has sometimes followed the higher nerve operation. Practitioners seldom have recourse to it, unless the horse is become quite useless; nor is even the lower operation resorted to until other remedies have failed, and the horse is become incapable of earning his keep, or too lame to be ridden, or otherwise worked with safety and comfort. The nerve divides at the fetlock joint

NEU—NIC

into two branches, which pass down the pastern on each side of the artery. The principal branch accompanies the artery a little way behind it, and is that from which a portion is to be removed in the lower operation; the other branch is on the fore part of the artery: a little below the fetlock joint it diverges or separates from the artery, passes over the pastern vein, and inclines toward the front part of the pastern: this branch is not to be cut in the lower operation. I am inclined to think that the lower operation should always be preferred; for, as Mr. Coleman has justly observed, it will not only be sufficient to relieve the animal from pain, but may also cure that morbid sensibility or chronic disease of the foot which is the cause of lameness. It has been supposed that the coffin joint is generally the seat of those chronic lamenesses which are so often occurring; not from the rupture of any ligament connected with the joint, but from a deficiency of synovia or joint oil, and an abrasion of the surface of the navicula or nut bone. I am inclined, however, to believe that such lamenesses sometimes depend on a morbid sensibility of the laminæ or elastic processes, and of the skin covering the coronary ligament. This opinion seems to be strengthened by the circumstance of the increased growth of the hoof, and the improved quality of the horn, in consequence of the nerve operation. In vol. iii. of my *Farriery*, the nerve operation is fully described, and illustrated by a plate.

NEUTRAL SALTS. Salts that are neither acid nor alkaline, but a compound of both. The only neutral salts used in veterinary medicine are, sulphate of magnesia, commonly named Epsom salts; sulphate of soda, or Glauber's salt; muriate of soda, or common salt; nitrate of potash, or nitre; and muriate of ammonia (sal ammoniac).

NICKING. An operation often performed on horses, to raise the tail, and make them carry it more gracefully. Some horses do not require this operation, particularly such as are well bred, and are docked at an early age; but the appearance of others that carry their tails almost close to their buttocks is certainly improved by nicking. The operation consists in making two or three incisions

NIP—NIT

in the under part of the tail, extending quite across, or as far as there is no hair produced. The first cut should be about two or three inches from the basis of the tail, and a similar space should be left between the first and second, and second and third incisions. On making the second incision, if the first has been sufficiently deep, part of the muscle will protrude, which must be drawn out and cut off. The bleeding is to be stopped by pledgets of tow firmly bound on. The tail is now to be kept in an elevated position, by means of a cord tied to the end of it, and passed over a pulley with a weight attached at the other end of the cord; it is needless to give a particular description of this part of the process, as the apparatus may be seen in any horse-dealer's stable, where it is always kept ready. It will be necessary to keep the horse in the pulleys from three weeks to a month. The morning after the operation, the bandage must be loosened or cut through on the back part of the tail, or severe inflammation may be the consequence. The weight applied to raise the tail must at first be moderate, not exceeding two or three pounds; but about the sixth day it may be increased to four or five pounds. No kind of dressing is necessary during the process; the loosened bandages will fall off about the third or fourth day, and leave large gaping wounds, which will gradually fill up, and be completely healed in three weeks. When the horse has been in the pulleys about a week he should be taken out for a short time, and led up and down, in order to see in what manner he carries his tail. If it is not sufficiently raised, it may be necessary to put the transverse line, upon which the double pulley runs, a little farther forward towards the head of the stall, that the tail may be brought more over the horse's back; and should he carry it on one side, the pulley must be so confined as to keep it on the opposite side for a sufficient time to make him carry it straight. A similar examination should be made daily, and he should have a little exercise.

NIPPERS. The two front teeth, above and below, have been thus named.

NITRATE OF POTASH. See *Nitre*.

R

NIT—NOS

NITRATES. Neutral salts, composed of nitric acid and some alkali, earth, or metallic oxide. Nitre or saltpetre, for example, is composed of nitric acid and potash, and is therefore named, by the London College, nitrate of potash.

NITRE, or NITRATE OF POTASH. This is an excellent febrifuge and cooling diuretic, and is generally given in a dose of one ounce daily, until a diuretic effect be produced. I have seen a dose of four ounces given, which occasioned alarming symptoms, and appeared to have a poisonous effect: however, the horse recovered in a day or two. As a diuretic, its effect is considerably increased by the addition of a little powdered resin; and as a febrifuge, by combining with it a little antimonial powder or tartarized antimony.

NITRIC ACID. Double Aquafortis, or strong spirit of nitre. This is a powerful caustic, and seldom used undiluted, or uncombined with some metallic oxide in the form of a metallic salt. Red precipitate, for example, is a combination of nitric acid and quicksilver, or mercury, and is therefore now named nitric oxide of mercury. When nitric acid holds nitrous gas in solution, it becomes of a yellow, or orange colour, and emits a suffocating vapour; in this state it is named *nitrous acid*.

NOSE-BAG. A bag which is made to contain part of the head of a horse, and is fastened by buckling behind the ears. It is used for giving oats, chaff, and beans, or other provender in.

NOSOLOGY. That department of medicine which arranges its various subjects into classes, orders, genera, species, &c., giving to each an appropriate name. Doctor Cullen's *Nosology* is most generally adopted, and, next to it, the *Nosology* of Sauvages, a celebrated medical professor of Montpellier. A veterinary nosology has been attempted by Mr. Blaine, and is, indeed, the only one that has been published; for the names that have been given to the diseases of animals by modern veterinary writers are, in a great measure, the same as those employed by ancient farriers. Thus we have Grease, Strangles, Broken Wind, Molten Grease, &c. &c. The

NOS—NUT

nomenclature of medicine has been greatly improved by founding it on chemical principles ; by which the name of the medicine is made to express its composition, instead of its supposed virtues, or the name of its inventor. Glauber's salt, for example, being composed of sulphuric acid and soda, is now named sulphate of soda.

NOSTRILS. The nostrils are sometimes the seat of diseases, such as glanders, strangles, and catarrh. Sometimes the wing or flap of the nostril is affected with palsy, so that it falls down, and proves a serious impediment to the animal's breathing. When both nostrils are so affected, it may even cause suffocation ; as a horse breathes only through his nostrils, except in violent expiration, as in coughing. This disease may be remedied in some degree by cutting out a portion of skin above the fallen flap, and then sewing up the wound.

NUTRITION. The living body is continually losing its constituent parts, which a variety of causes are incessantly carrying off ; and when the stomach and other parts concerned in the process of nutrition are in a healthy state, and there is a due supply of food, a constant renovation is at the same time going on. Nutrition is a complicated process, and may be interrupted by various circumstances. Supposing the food to be sufficient in quantity, and of a proper quality, it is necessary that it should be masticated, and moistened with saliva ; and then, by means of the tongue, with the muscles of the pharynx and gullet, it is conveyed to the stomach : here the masticated food mixes with certain juices, by which it is further altered, and converted into a pulpy mass, termed Chyme. As soon as it passes from the stomach, it mixes with the bile and pancreatic juice, which are supposed to cause a separation of the more essential parts of the digested mass, which is named Chyle. On the inner surface of the small intestines there are innumerable small orifices, which are the mouths of the lacteal vessels ; by these the chyle is sucked up and conveyed to the thoracic duct, a vessel that lies upon the vertebræ of the back. By the thoracic duct it is carried to a large vein near the heart, where it mixes with the blood. From this sketch it may be seen

NUT—OAT

how many circumstances may happen to impede or oppose nutrition. Thus, in old horses, the grinding teeth sometimes wear so unequally, that mastication is performed with difficulty, and great part of the grain they eat is swallowed unchewed; or there may be a deficiency of saliva: in either case the food will pass into the stomach in an unprepared state. I have seen a case where the muscles of the pharynx had become paralytic, so that the horse was incapable of swallowing.

NUTRITUM. An ointment composed of litharge, vinegar, and oil.

NUX VOMICA. A poison, the produce or seed of a tree named *Strychnos*, which grows in the East Indies. According to Berthollet, it has been employed by some French farriers as a secret remedy for the glanders. They gave at first one of the nuts or seeds rasped, and gradually increased the dose to seven or nine nuts; but its effects are too violent to be generally used. M. Collaine, professor of the veterinary school at Milan, in his *Treatise on Glanders*, speaking of two badly glandered horses, says, "I determined on making a trial of *nux vomica*, which I gave to the extent of two ounces a day to each horse, beginning, however, with only half a dram. It seemed to stop the progress of the ulcers, which assumed a red healthy colour; but in about eight or ten days one of the horses was attacked with a spasm, so violent as to induce me to put an end to my experiments and to the torments of the animals." When a dog has swallowed *nux vomica*, an emetic should be given the moment it is discovered. I have known this succeed even after the convulsions which *nux vomica* causes had come on. The emetic most readily procured, and as quick in its operation as any, is a teaspoonful or more of common salt, dissolved in a very small quantity of water.

O.

OATS. Good oats are sufficiently nutritious for horses that work moderately, and, if given in proper quantity and at proper intervals, will, with a suitable proportion

OBE—ŒDE

of good hay, enable a horse to do as much work as he is capable of enduring. It is generally supposed, however, that the addition of one half or a fourth part of beans to the oats form a more invigorating diet, and one more fit for horses whose employment is very laborious; but I believe that oats alone, especially when bruised, are more easy of digestion, and sufficiently nutritious. Horses that have been accustomed to beans may feel the want of them for a short time, if kept wholly on oats; even bruised oats are at first often unpalatable to horses that have been kept well, and that have a delicate or fastidious appetite. To such horses it is the best plan to give what they relish most, as it is more likely to do them good; but, as a general practice, the preference should certainly be given to ground or bruised oats. When oats have been badly saved, or heated, for want of turning, they are very injurious, and dear at any price. I have seen serious losses sustained by making use of them. New oats are difficult of digestion, and apt to cause flatulent colic and diarrhoea. This fault may be corrected, in some measure, by drying them slowly on a kiln. At whatever price good old oats may be sold, they will always be found the cheapest.

OBEITY. A morbid degree of fatness. It is most effectually corrected by moderate feeding and regular exercise.

OBLIQUE MUSCLES. The muscles of the abdomen or belly are thus named. There are four of them: two internal and two external oblique. Some of the muscles of the eye are also named Oblique Muscles.

OBSTIPATION. Constipation, Costiveness. See *Costiveness*.

OCCIPUT. The back part of the head.

ODONTALGIA. *Tooth-ache.*

ŒDEMA. A watery or dropsical swelling. Those swellings of the hind legs, belly, and sheath, which are commonly supposed to depend on *humours*, are of this kind, and are therefore called œdematous swellings. They may be distinguished from inflammatory swellings, by being free from unusual heat and tenderness, and by a pit or indentation remaining in the part, after being pressed with the finger. See *Dropsy*.

ÆSO—OLE.

ÆSOPHAGUS. The tube or passage from the mouth to the stomach. The horse's æsophagus has a strong muscular coat, but is lined internally with cuticle, similar to that which covers nearly one-half of the stomach. See *Stomach*.

OFFICIAL. A term applied to medicines that are made according to the direction of the London College of Physicians.

OILS. Oils are procured both from animals and vegetables. Animal oils are obtained from quadrupeds and from fish, such as the seal, whale, &c. ; vegetable oils from certain trees and the seeds or kernels of fruit. Animal oils may be either fluid or solid ; vegetable oils, either fixed, volatile, or essential ; that is, obtained by distillation, as oil of peppermint. Oils are distinguished into *fat* and essential oils. The former are generally procured from the substance which contained them, by pressure, and are therefore also named *expressed* oils ; such are oil of olives, oil of almonds, oil of linseed, &c. Essential oils differ from the former by the following characters : their smell is strong and aromatic ; their volatility is such that they rise with the heat of boiling water, and their taste is very acrid ; they are likewise more combustible than fat oils. They are obtained both by distillation and pressure from strong smelling plants, seeds, &c. The use of the fat oils in medicine is considerable ; they are prescribed as laxative, softening, and relaxing remedies ; they enter into the composition of ointments, liniments, plasters, &c. Essential oils are employed as cordial, stimulant, and antispasmodic remedies.

OINTMENTS. Unctuous substances of the consistence of butter : when made considerably thinner by the addition of oil, they are named liniments ; but when their solidity is increased by being melted with wax, rosin, &c., they are called plasters. See *Digestive Ointment*, &c.

OLECRANON. The head of the bone named *Ulna*, which, in the horse, consists almost entirely of *olecranon*, or head ; the remainder tapering away to a point, and terminating about the middle of the *radius*. The olecranon affords a powerful lever for the *triceps extensor*

OLF—OPA

cuti muscle to act upon, in straightening the forearm upon the *humerus*, and moving the body forward when the foot is on the ground. See *Skeleton of the Horse*, frontispiece.

OLFACTORY NERVES, or VENTRICLES. The olfactory nerves of the horse are large cavities, and communicate with the other ventricles of the brain. From the olfactory ventricles proceed numerous fibres, which, after passing through the cribriform plate of the ethmoid bone, divide into innumerable branches, which are spread over all the interior part of the nostrils, and constitute the sense of smell.

OLIBANUM. *Thus; Frankincense.* A resinous substance used in the composition of plasters.

OLIVARIA CORPORA. Two eminences of the form of olives, within the ventricles of the brain.

OLIVE OIL. The most useful of the expressed oils, whether considered as an article of diet or medicine. There are two kinds of olive oil: the best is employed for culinary purposes, and in the preparation of medicines for internal use. This is generally distinguished by the name of Salad Oil. Florence oil is the best olive oil. The other is employed in the preparation of liniments, ointments, &c., and for various purposes in the arts, and is known by the name of Galipoli Oil, or Second Olive Oil. There is sometimes a third kind sold, inferior to the galipoli; it is used only in woolcombing, or in oiling machinery, and is named Combers' Oil or Common Oil.

OMENTUM. The omentum or cawl is a double membrane, containing within its folds a considerable quantity of fat, in the human body and in many quadrupeds; and when such bodies are opened, the first thing that presents itself is this membrane, spread over the whole intestines down to the pelvis. But in the horse this is never seen; nor does the omentum contain any fat, or at least only an inconsiderable quantity: it is confined chiefly to the stomach, over which it is spread, and extends only to the anterior part of the intestines. On this account the horse is not subject to that kind of rupture termed Epiplocele or Omental Hernia.

OPACITY. A want of transparency, which sometimes

OPE—OPI

happens in those parts of the eye named Cornea and Pupil. See *Eye*.

OPERATIONS. This term is applied to the various processes for preparing medicines, and for the manual parts of surgery: hence we have chemical, pharmaceutical, and surgical operations.

OPHTHALMIA. An inflammation of the membranes or tunics of the eye. The term is also applied to that disease of the horse's eye which takes place without any external injury, and in its chronic stage is named Ophthalmia.

OPIATES. Medicinal preparations or compositions, of which opium is a principal ingredient. There is a considerable number of these preparations in the London Pharmacopœia, but the only one necessary for veterinary purposes is the tincture of opium or laudanum. Opium is generally mixed with other ingredients, and given to horses in the form of a ball, or dissolved in water as a drench or clyster. There is an old preparation, much esteemed by farriers, named Venice Treacle, which consists of a great number of ingredients. The following preparation will be found much more efficacious for all veterinary purposes.

Take, of Opium, one ounce and a half.

Powdered ginger, three ounces.

Powdered caraways, (fresh) } of each six

Powdered allspice, } ounces.

Treacle, one pound and a quarter.

Macerate the opium in four ounces of hot water until it be dissolved; then mix it with the treacle. Rub the powders together until they are well mixed, after which add the treacle and opium. This may be named opiate electuary, or, improved Venice treacle. It should be kept in a well-closed pot. The dose of this electuary is about two ounces. The preparation named "Opiate Confection" was directed by the London College of Physicians as a substitute for Venice treacle, and another old preparation, named Mithridate. This is, I have no doubt, an excellent composition, but, for veterinary purposes, the formula I have just given is in every respect preferable. I am of opinion, that a better tincture than

OPI

laudanum may be made for veterinary use. I have employed the following under the name of Anodyne Carminative Tincture, because it is an excellent remedy for the flatulent or spasmodic colic; and it may be observed that, instead of making it with a mixture of spirit of wine and water, according to the practice of druggists, I have used old cognac brandy, or rum, either of which, and especially the first, is in itself an excellent cordial and carminative. See *Cordials* and *Carminatives*.

ANODYNE CARMINATIVE TINCTURE.

Take, of the best Turkey Opium, sliced, one ounce.

Best Jamaica Ginger, bruised, two ounces.

Cloves, bruised, two ounces.

Brandy or rum, one quart.

Keep them together in a well-corked bottle, which must be shaken daily for two or three weeks, when it will be fit for use. An opiate powder may also be kept, composed of powdered opium, one ounce; powdered allspice, four ounces; powdered caraway-seeds, eight ounces. This should be kept in a well-corked bottle, and will be found an excellent cordial; the dose, about three quarters of an ounce, given either as a drench in a little warm beer, or made into a ball with treacle.

OPISTHOTONOS. A spasmodic affection of the muscles of the back, sometimes accompanying locked jaw.

OPIUM. A narcotic substance prepared from poppies. It was formerly called Opium Thebaicum, or Thebaic Extract, because at that time it was prepared principally at Thebes. Opium is a valuable medicine, and the most powerful anodyne and antispasmodic we are acquainted with. The dose in which it may be given to horses and cattle varies considerably, according to the circumstances of the case: thus, in locked jaw it has been prescribed to the amount of three drams; and in some cases only one-ninth part of that quantity has been found a sufficient dose. Mr. Coleman thought, from some experiments made at the Veterinary College, that opium has no apparent influence over the nervous system of the horse, and that it does not alleviate pain. I think that opium, as to its effect on the horse, does not possess that soothing, anodyne, and soporific quality

OPO—ORI

for which it is justly distinguished in human medicine ; but it certainly causes heaviness and sleepiness, and, in large doses, a kind of delirium. In Boardman's Dictionary it is said, " that a condemned troop horse had half an ounce only of purified opium given to him ; he slept, though in the day-time, for eight or nine hours, nor could he be readily roused." It is very pertinently and properly added, that " we (the author) have frequently seen the most violent stages of flatulent colic removed by opium, without the aid of any other medicine ; and in all such instances the animal was afterwards much inclined to sleep." One ounce and a half of tincture of opium is considered equal in power to one dram of opium.

When opium is given as a clyster, a double dose is necessary.

OPODELDOC, or SOAP LINIMENT. - A solution of soap and camphor in spirit of rosemary ; it is more properly named, in the late dispensatories, Soap Liniment. The following formula is from the London Pharmacopœia :

Soap, three ounces.

Camphor, one ounce.

Spirit of rosemary, one pint.

Digest the soap in the spirit of rosemary, and afterwards the camphor, till they are dissolved. By increasing the proportion of soap, which the spirit will dissolve by a moderate heat, the compound, when cold, will be solid, and resemble the celebrated Steers's Opodeldoc.

OPOPONAX. A gum resin obtained from a species of parsnip which grows in the south of Europe. It is of no use in veterinary medicine.

OPTIC NERVE. The nerve on which sight depends.

ORBIT. The socket of the eye is thus named.

ORGANIC. A disease is said to be organic when any particular organ of the body is affected.

ORIGANUM. Wild marjoram. An essential oil is distilled from this herb, which is much esteemed by farriers as a remedy for old strains and hard swellings. It is generally mixed with other oils, such as oil of elder, and is often an ingredient in blistering ointments.

ORP—OX

ORPIMENT. Yellow arsenic. A combination of sulphur and arsenic. Yellow arsenic, finely powdered, and mixed with lard or *Ægyptiacum*, is sometimes employed in cases of fistula, poll-evil, and large warts, but is a violent remedy; and must be used with caution.

OSSIFICATION. Ligaments and cartilages, when inflamed; sometimes become bony, especially those ligaments which unite the splent to the canon bones, and the lateral cartilages of the foot.

OSSILETS. Small bony excrescences about the leg.

OTALGIA. The ear-ache. I have known a horse affected with deafness, which was perhaps preceded by pain in the ear. When there is reason to suppose that a horse is suffering in this way, bleed, give a dose of physic, blister the parts about the ear, and put a rowel under the jaws.

OVARIA. Two appendages to the uterus, which are excised in the operation of spaying.

OVER-REACH. A horse is said to over-reach or overlash when he wounds the fore heel with the hind foot. These wounds are sometimes attended with considerable inflammation, and require poulticing: in general, the application of a little Friar's balsam or tincture of myrrh is sufficient.

OVER-WORK. Many of the diseases of horses originate in over-work. I have several times seen the muscles of the back as tender as if they had been macerated in water; and as easily separated from the bones, in consequence of excessive exertion. Were horse proprietors to reflect a little upon these circumstances, they would be led to work horses with moderation; not only on the score of humanity, but for their own interest also. Horses are not at all times capable of the same degree of exertion; and what may be moderate work for a horse at one time, may be excessive or hurtful exertion at another. It is from inattention to this circumstance that post, coach, and waggon horses are so often injured. I have known several horses killed by being worked when they were unwell.

Ox Foot. A cleft or division in the front of the hoof, or rather a crack, for it is the effect of an accident.

OXY—PAC

OXYCROCEUM. A plaster composed of saffron and some gums dissolved in vinegar.

OXYD, or OXIDE. Any simple substance in combination with a smaller quantity of oxygen than is required for the formation of an acid, is called an Oxide.

OXYGEN. The tendency of oxygen to combination is so strong, that it has never been obtained separately. Its most simple form is oxygen gas, or oxygen joined with caloric. It constitutes 0,22 of atmospheric air, is a constituent of water, and the most powerful known agent of decomposition.

OXYMEL. A syrup composed of two parts of honey and one of vinegar is named Simple Oxymel. If squills or colchicum be steeped in the vinegar, the syrup is named Oxymel of Squills or of Colchicum. Simple oxymel has been found useful in chronic cough; probably an oxymel of garlic would have a similarly good effect.

OXYMURIATES. Salts composed of oxymuriatic acid, and an earthy, alkaline, or metallic base. The only oxymuriate employed in veterinary practice is the oxymuriate of mercury, or corrosive sublimate. See *Corrosive Sublimate*.

OXYMURIATIC ACID. A vapour or fluid obtained from a mixture of common salt, powdered manganese, and sulphuric acid. This mixture, when moderately heated, produces a suffocating vapour or gas, named oxymuriatic gas, which destroys the contagious quality of glanderous matter when exposed to it.

OZÆNA. A fetid discharge from the nostril, occasioned by an injury of the bone of the nose. It resembles glanders; but is not contagious. An inconsiderate blow with a stick or the handle of a whip is generally the cause of this disorder in horses.

P.

P. This letter in a medical prescription means *Pugil*, or handful.

P. Æ. These letters stand for *partes æquales*, or equal parts.

PABULUM. Food. See *Food and Feeding*.

PACE. The paces of the horse are the *Walk*, the

PACE.

Amble, the *Trot*, the *Canter*, and the *Gallop*. The walk consists in an alternate sinking of the fore and hind quarters. Thus when one of the fore legs is advanced, the fore quarters must sink until the body is brought forwards, when the leg recovers its perpendicular position: the same takes place with regard to the hind quarters. The horse should move lightly, firmly, and quickly. The knee should be somewhat bent, the leg remain suspended in the air for an instant, and the foot should alight perfectly flat upon the ground. This temporary suspension of the leg in the air, during the walk, is one of the best proofs of soundness; because if the horse felt any pain in his feet, he would not support himself so long upon one leg, but would bring the other to the ground as quick as possible. In order to walk well, a horse must be well shaped, especially in his fore quarters: for if he be not firm and well on his centre of gravity whilst he is standing still, he never can be firm and elastic during progression. For this purpose his shoulders should be oblique, and lie well towards his back, and the forelegs perfectly perpendicular from the chest to the ground; for, if they incline too much under the body, the horse will step short, and on his toe. They should also be of proportionate length with the hind legs, that the motion of both fore and hind quarters may be in unison. The chest should not be too narrow, nor the toes turn outwards, as, in this case, the legs are apt to strike each other in going, especially on an uneven road. On the other hand, if the chest be too wide, the horse will tread principally upon the outer quarter of the foot, and will therefore be more unsteady than if he pressed equally on every part. Wide-chested horses have generally a rolling motion in their gait, which is in some degree unpleasant to the rider. It is a great auxiliary to a light and airy style of walking, that the neck should rise high out of the chest, and the head be well united to it, so as to afford it the greatest possible liberty. The hind quarters, though not so essential to good action in a slow pace as to speed, should be well constructed: for this purpose, the hind legs should not stand too far backward from the body. The shank bone

PACE.

below the hock should be perpendicular, and within the line which falls from the end of the croup to the ground. Such a position of the hind legs enables a horse to bring them quickly under the belly, and thereby to accelerate the motion of the fore legs, by sustaining a great part of the weight while the fore quarters are in action. Young horses, that are eager and high-couraged, require some pains to confine them to the walk; and this is only to be done by the greatest coolness and perseverance on the part of the rider. They should therefore be restrained with a light and firm hand, and should never be roughly checked with the bridle, or chastised with whip or spur, as such practices only render them more impatient or unsteady. A young horse, if possible, should always be ridden with rather a loose rein, as a tight one is sure to spoil his mouth and render him fretful; for it either teaches him to bear upon the hand, and consequently throws much of his weight upon the shoulders, thereby impeding their action in a considerable degree, and deadening his mouth; or, it occasions him to be constantly pulling and snatching at the bridle, in order to get his head at liberty.

In the walk, the horse moves his legs diagonally; that is to say, the fore leg and hind leg of the opposite side. Thus, if he leads with the left or near fore leg, the right or off hind leg follows in succession; but before the foot of the hind leg reaches the ground, the fore foot of the same side is lifted up to make room for it, and this action is continued on both sides alternately. If the horse moves a fore leg and a hind leg of the same side at the same time, it is called *ambling*. This is seldom a natural pace, but is taught in some countries, where it is preferred to the walk, on account of its occasioning less motion to the rider; because the rising and falling of both the fore and hind quarters takes place at the same time, and not alternately, as in the walk. Some horses will amble at the rate of six miles an hour; but it is a very ungraceful action, and probably less safe than the walk. The French generally train their *bidets*, or ponies, to this pace. It generally happens, that if a horse walks well, he goes well in every other pace.

PACE.

In the walk, as I have already remarked, the horse moves his legs in succession ; but, in the Trot, he moves two at once ; that is to say, a fore leg and a hind leg of opposite sides at the same time. To perform this pace well, the knee should be elevated and advanced, so as to be seen by the rider, projecting beyond the point of the shoulder ; and the hind quarters should bend well, particularly in the stifle and hocks, by which means the spring of the whole machine is increased. When the trot is accelerated to a great degree, there is a time when all the legs are off the ground at once, and, during this period, the horse advances not only the distance which he embraces by the extension of his limbs, but also some distance by the momentum of his body, whilst all his legs are in the air. It sometimes happens when a horse, particularly a young one, is forced in the trot, beyond his powers, that he gets into a confused pace ; that is, a trot with his fore, and a canter with his hind legs, *et vice versâ*. In this case, he should be stopped instantly ; because such an imperfect action not only reduces his speed, but renders him unsafe. When a horse is badly formed in his fore quarters, and goes heavily on his shoulders, he is very apt to strike the shoe of his fore foot with the toe of his hind foot. This occasions an unpleasant noise, and also endangers his falling, in case the toe of the hind foot should catch the heel of the shoe on the fore foot, which sometimes occurs. This may be remedied in some measure, by throwing him more on his haunches, and by keeping the toes of his hind feet as short as possible. (See *Forging*.) A horse, whose fore legs are not of a proportionate length with his hind legs, or whose back is short in comparison with the rest of his frame, generally trots with his hind legs so widely separated from each other, as to alight on the outside of his fore feet at every time they reach the ground ; or else he goes obliquely like a dog, by which means the fore and hind legs move in two different lines of direction, so that one hind foot alights on the outside of the fore foot, and the other hind foot, between the two fore feet at every stroke ; and by this method the horse avoids over-reaching. The long darting trot is not so

PACE.

speedy as the short quick trot, but shows great muscular power and elasticity, and is more peculiar to thoroughbred horses than to any others. Some horses have been said to have trotted even eighteen miles within the hour; but their pace partakes more of a run than a regular trot, as they move their legs separately, as in the walk, and not one fore and one hind leg at the same time, as in the trot. Horses that are kept solely to trotting can hardly be made to gallop; and this happens from the muscles being constantly employed in one peculiar action, so that they cannot adapt themselves to any other.

The CANTER is a very easy and pleasant pace to the rider, when it is well performed. The manner in which the horse is taught to perform this pace is by shortening the gallop; but it is first necessary that he should be well shaped in his hind quarters, and stand with his hind legs rather under his body. He should also be high in his fore quarters, as it is very difficult to make a horse canter well that is low before. The canter is divided into four motions; which is the cause of its being so much easier to the rider than any other pace. Thus, if the horse leads with the off fore leg, the feet will come to the ground in the following order: namely, the near hind leg, the off hind leg, the near fore leg, and the off fore leg; and, during this succession of action, there is a moment when three feet are on the ground at the same time, and in the same order, as in the walk: for instance, the two hind feet and the near fore foot will be on the ground just prior to the instant when the off fore foot alights; but when this takes place, the near hind foot rises, leaving the other three, viz. the two fore feet and the off hind foot, stationary. In the canter the horse moves obliquely, by moving either his right or left shoulder in conformity with the leading leg. Thus, if he leads with his right fore leg, the right hind leg must follow, and be advanced more under the body than the left leg. By this inclination of the body, the fore and hind legs move in two different lines of direction; so that if the horse leads with the off fore leg, the near hind leg takes the line between the two fore legs, by which means the croup is thrown outward to the same

PACE.

side on which he leads ; and the reverse of this will, of course, take place, if he leads with the left leg. When the horse leads with the off or right fore leg, and follows with the left or near hind leg, he is said to canter false. This renders his motion both irregular and unsafe ; and is particularly unpleasant to the rider. Whenever this false action occurs, the horse should be stopped instantly. Horses are generally taught to lead with the off fore leg, because it is easier to the rider ; who, when holding the reins in his left hand, inclines his body somewhat to the left side, which inclination agrees with the oblique direction of the horse's body. But he should be suffered to lead with either leg, occasionally ; because, if the animal be confined to moving always with the same leg foremost, the opposite limbs become so contracted in their action, as to lose much of their natural elasticity : besides that the fore leg, which does not lead, comes to the ground first, and receives principally the weight and shock of the body, thereby wearing itself out faster than the other. If the horse is required to lead with the off fore leg, it will be necessary to shorten the near or left hand rein, and to press the horse's side with the left leg, applying the spur, if necessary. By shortening the left rein, his head and neck will be inclined to the left side, which will confine the motion of his left shoulder, and force him to advance the right shoulder ; at the same time the pressure of the rider's left leg throws the croup to the right side, and obliges the hind to take the same direction as the fore quarters. If he be required to lead with the left or near leg, the right hand and heel must be employed in a similar manner. A horse that canters well must have a light mouth ; for if he bear heavily on the hand of the rider, he must go on his shoulders, and consequently his action will become more unsafe.

The GALLOP is the swiftest pace of which the animal is capable, and differs in nothing from the canter except in its velocity. When this pace is to be executed, the body is carried in a perfectly horizontal position, and with very little motion either upwards or downwards : but it requires great muscular power in the

PACE.

limbs to preserve this straight line in the motion of the body ; because, as the body sinks nearer to the ground, during the gallop, the legs must bend very considerably at every joint, in order to clear themselves from the ground every time they are advanced to take a fresh stroke. There is a considerable difference between the gallop of the horse and of those animals that have flexible spines or back bones, such as the dog, the cat, and the hare. These animals gallop with their fore and hind legs extended at the same period, so that every time the legs recover themselves to take a fresh stroke they cross each other ; that is to say, the hind legs come between the fore legs, when they meet under the body. Hence, at the period of gathering the legs together, the back forms an arch, by which means the hind quarters are brought more under the centre of the body ; and this is the chief cause of the comparative swiftness of those animals in proportion with their size. But the gallop of the horse is very different ; he never extends his fore legs and his hind legs at the same time during the gallop ; hence all the representations of that action in pictures of race-horses are false and erroneous, for the hind legs and fore legs follow each other ; for instance, when the hind legs are at their utmost extension backward, the fore legs are under the belly, and just quitting the ground to throw themselves forwards ; but the hind legs instantly follow, so that, when the fore legs are extended forwards, the hind legs are brought under the body to take a fresh spring. The legs, however, do not all alight at the same moment, but in a regular succession, nearly in a line, and at equal distances from each other. The late M. St. Bel, who certainly understood well the paces of the horse, divides the gallop into three parts. The common gallop, he says, contains three times. If, for example, the horse begins his gallop on the right side, the left hind foot beats the first time, the right hind foot and left fore foot beat the second time together, and the right fore foot beats the third. In the gallop of four times, the feet strike the ground in the same order as in walking. Supposing the horse galloping on the right leg, the left hind foot beats the first time, the right hind

PACE.

foot beats the second time, the left fore foot the third time, and the right fore foot the fourth time. This gallop is regular, but confined, and little adapted to speed. The gallop at two times is faster than at three or four. The legs follow in the same order as in the trot, so that the two sounds are given by the left fore foot and right hind foot, and the right hind foot and left fore foot, striking the ground together. In galloping, the horse may lead with which fore leg he pleases; but whichever it be, the hind leg of the same side must follow next, otherwise he is said to have his legs disunited, and to gallop false. To remedy this motion, the rider must stay the horse a little on the hand, and help him with the spur gently on the contrary side to that on which he is disunited. As, for example, if he be disunited on the right side, he should help him with the left spur, stay him on the hand a little, and also help him at the same time with the calves of his legs. When galloping in a circle, the horse is obliged to lead with that leg which is within the circle, because he leans inwards, and consequently requires that leg to be more advanced, for the purpose of supporting the weight of the body. Horses, in galloping, sometimes change the leading leg whilst they are going. It has a beautiful effect when well performed, and is a proof of great strength and command of their limbs. It is necessary, however, that the hind leg on the same side should change also, or else the horse will gallop false. It is a common practice with most grooms and jockies, to teach horses to pull against them in the gallop, and it is supposed that the horse cannot go at speed in any other way. But when the animal bears thus upon the hand of the rider, a considerable portion of the power which should be concentrated in his body, for the purpose of maintaining his equilibrium, is directed forwards, and hence he becomes more liable to fall, in case of meeting with any casual obstacle. There is indeed a very prevalent idea with most riders, that the bridle has the effect of keeping a horse from falling; hence, whenever the animal trips, the rider pulls hard with the rein, and the consequence is, that, if it happens to be a curb bridle,

PACE.

it draws the horse's head inwards towards the chest, and, by thus confining the action of his head and neck, is more likely to accelerate his fall than prevent it. If the rider were seated on any other body than that of the horse on which he rides, he might have the power of assisting the animal by pulling against his mouth; as, for instance, a coachman on a coach-box; but when seated on the horse's back he becomes, as it were, a part of the animal, and his own body must go with the horse, in whatever direction it may happen to be. The best and most pleasant action is when the horse carries his head moderately high, and occasionally plays with the hand of his rider. It is also essential that he should have perfect liberty in the action of his hocks, so as to enable him to bring his hind quarters well under the body, by which means a great portion of the weight is taken off the fore quarters, and their action thereby accelerated. Speed does not so much depend on the length of ground which the legs cover at every step, as on quickly repeated motions; and this is proved by comparing the greyhound and the hare, both of which are very little inferior in speed to the horse, yet cover but a very small portion of ground comparatively with the latter. During the gallop, there is a period of time when all the legs are in the air at once, and at that instant the body moves on by the impetus it has received; so that the horse not only advances the space of ground which his legs cover when extended, but gains also an additional space by the force with which his body is propelled forward; and this force will, of course, be in proportion to the power of the hind quarters, from which all motion proceeds.

There is another pace very useful to the horse, although not a natural one, which is called *Passaging*. It consists in moving nearly sideways, so that the fore and hind legs go in two different lines of direction. It must be practised along the side of a wall or a hedge, with the head facing the wall. The body of the horse should not be quite at a right angle with it, but somewhat oblique, with his forequarters, a little turned towards the line in which he is moving. Thus, if he is passaging to the

PACE.

right, his shoulders should incline the same way; but, in order to prevent him from going in a straight line, the rider's left leg must be applied to the flank, so as to force his croup outwards; and, at the same time, the right hand rein should be a little straightened. The horse then crosses the left leg over the right, in both fore and hind legs, or, if he be going to the right, the reverse takes place. It is a very useful pace to carriage horses, as it enables them to turn with facility, and prevents them from treading on their coronets while crossing their legs. It is taught to all horses employed for military purposes; and it is on this account that old troop horses are so readily broke to harness, and are so handy in their turning. There is another pace, called the passage on a straight line, which is much practised both in Germany and Italy. For this purpose they choose a temperate horse that has good action, and teach him to lift two legs together, one before and one behind, in the form of a St. Andrew's cross; and, on setting these two to the ground, to raise the other two, and keep them some time in the air, in such a manner that at every action he does not advance more than a foot. The beauty of this pace consists in holding the legs a long time in the air. The motion, however, of the legs, is the same as in the walk or trot, for they go in the same order; and the only difference is, that, in passaging upon a straight line, the legs are kept longer in the air. It is very difficult to teach a horse this pace; and so much art and patience does it require, that a horse is two or three years in being trained to it. Amongst other paces it is very essential to teach a horse to back, either in or out of harness, for many awkward situations occur which render it necessary. But the common treatment of the horse in harness, especially in light carriages, is such as to render it a matter of wonder that the animal can be brought to understand in the slightest degree what is required of him. The obvious use of the whip is to urge the animal to proceed, and a high-mettled horse very seldom requires any stimulus of that sort; but what must be the result when he is whipped to make him stand still? for the animal must

PACE.

be endowed with more than human perception if he can make any distinction when the same means are employed to make him go forward, and also to stand quiet. The custom also of reining the head up so high with the gag rein, as is the common practice, has a very pernicious effect upon the animal, especially if he be thick in the throple, at the junction of the head and neck; for it occasions such a pressure on the jugular veins, as almost to stop the circulation of the blood from the head, and very probably contributes in a great degree to produce most of those diseases of the eyes with which coach horses are often affected. The head being raised so high, throws the fore quarters out of the line of draught, and consequently deprives the horse of the means of applying his strength mechanically to the best advantage; independently of the uneasiness and pain such a position produces in the muscles of the neck, by keeping them confined to one posture for such a length of time. Hence, when coach horses, reined up in this manner, are standing in the street, it may generally be observed that they put out their fore legs as much as possible, so as to lessen the angle between their necks and their fore quarters. But the greatest evil to which carriage horses are exposed, is the manner of harnessing them to stage-coaches; and, such is the danger attending it, that few travellers would hazard their lives in those vehicles, were they at all sensible of the risk to which they are exposed. The evil alluded to is the practice of driving the wheel horses without a breeching, so that all the weight of the carriage in going down hill is resisted by the collar only; and when it is considered that all the pressure is acting upon the end of the neck, close to the withers, and consequently pulling the horse downwards towards the ground; and that the major part of the horses used in stage-coaches are lame or tender in their feet, and sometimes scarcely able to support their own weight; the number of coach accidents is not surprising, when to these evils is added the weight of three tons pressing against the wheelers in going down a hill, probably covered with large loose stones, or uneven on its surface. But, independently of the danger of the

PAC—PAL

animal being thrown down, all the weight before mentioned is resisted only by a leather strap which buckles the harness together at the upper part of the collar, and which, in case of its breaking or becoming loose, would let the harness fly asunder, and the horse would be immediately overrun by the carriage; and the consequence of such an accident may very easily be calculated. But, strange as it may appear, all this danger is incurred every day, merely because the coachman considers breeching to be old-fashioned, and beneath his taste and dignity. *R. Lawrence's Complete Farriery, &c.*

PACK-HORSE. In choosing a pack-horse, the form of the withers and shoulders should be attended to, as those with thin shoulders and high withers are very apt to be galled by the pack-saddle.

PALATE. The upper part or roof of the mouth. In young horses, this part is generally very full or swollen, so as to be even lower than the upper front teeth. This is more particularly the case when young horses are changing their teeth. This is supposed to hinder their feeding, and is named the *Lampas*. See *Lampas*.

PALLIATIVES. Medicines or operations by which diseases are diminished or relieved, but not perfectly cured. However desirable palliatives may be in many diseases of the human body, they are seldom satisfactory in the diseases and lamenesses of horses. Practitioners, however, are obliged to have recourse to them, though a great deal of fruitless expense is often thereby incurred.

PALM OIL. A rather fragrant unctuous substance, obtained from the palm-tree. It is of the consistence of lard or butter, of a fine yellow colour, and is a good emollient ointment.

PALPEBRÆ. The eyelids. See *Eye*.

PALPITATION, or Beating of the Heart against the Ribs. This seldom occurs in horses. The remedies are bleeding, purging, an abstemious regimen, or a run at grass if the season of the year is favourable.

PALSY, or PARALYSIS. A loss of muscular power, or an inability to move any part of the body. This disease seldom happens to horses; it is sometimes, however, a consequence of injuries of the head, or staggers. I

PAN

have met with several cases of palsy of the muscles of deglutition, in consequence of which the horses have been starved. The sphincter muscle, or neck of the bladder, is sometimes palsied or paralysed: this causes a constant dribbling of the urine, or, as it is termed, an *Incontinence of urine*. This disorder is generally brought on by hard riding, and not giving a horse time to stale when he has occasion to do so. (See *Urinary Organs and Staggers*.) Palsy is often a symptom of apoplexy, and is then to be treated accordingly. In paralytic affections of the limbs, blistering the part is the best remedy. Horses that are kept out in cold wet weather are sometimes seized with a numbness of the limbs; but this is different from palsy, and is soon removed by placing them in a warmer situation. See *Apoplexy*.

PANACEA. An universal remedy. A thing that never existed but in the imaginations of alchymists.

PANADA. Bran mashes. See *Mash*.

PANCREAS, or SWEETBREAD. A glandular substance situated in the abdomen near the stomach. It secretes or separates from the blood a juice which resembles saliva, and is conveyed by the pancreatic duct into the duodenum or first intestine, a few inches from the stomach. The biliary and pancreatic ducts enter the intestine close to each other. The pancreatic juice serves to dilute the digested food as it passes from the stomach, and may also assist the separation of the chyle. See *Nutrition*.

PANNICLE, or FLESHY PANNICLE. A thin muscular covering attached to the skin of brute animals, by means of which they are enabled to shake it, and get rid of flies or any thing which adheres to the hairy coat and causes uneasiness.

PANNEL. The pannels of a saddle should be frequently examined, in order to remove any lumps or nails, and thereby prevent saddle-galls.

PANTON SHOE. A contrivance for expanding contracted feet. The peculiarity of this shoe consists in its being made thicker on the inside than on the outside edge at the heels and quarters, so that the surface next the foot, instead of being flat, slopes outwards.

PAP—PAR

This shoe was first proposed by a French veterinarian, in the year 1660. A shoe, on the same principle, has been invented within the last few years; but, like all other mechanical contrivances for enlarging or expanding contracted feet, has, as far as I know, been found either useless or pernicious.

PAPS. When young horses are cutting their teeth, and sometimes after that period, the excretory ducts of some of the salivary glands under the tongue become inflamed and enlarged. These are named *Paps*, and are sometimes improperly cut off with scissors. It is sufficient to apply to them a solution of alum; or probably it may be as well to give the horse some bran mashes, with a little nitre, and leave the rest to nature. See *Barbs*.

PAPILLARY; *Pap like*; or rather *like small or minute Paps*. A term applied to little elevations on different parts of the body, whether morbid or natural. Those little eminences on the internal surface of the leaves or plates of the cow's third stomach are termed *papillary*. Eruptions or pimples on the human skin are sometimes named Papillary Eruptions.

PAR VAGUM, or *Wandering Pair*. The eighth pair of nerves are thus named in consequence of their extensive distribution. They arise from the *Medulla Oblongata*, and join with the accessory and great sympathetic nerves. The par vagum gives off, first, the right and left recurrent nerve: secondly, divers branches in the chest to form the cardiac plexus: thirdly, several branches to form the pulmonary plexus: fourthly, branches to form the œsophageal plexus: fifthly, the stomachic plexus in the abdomen: sixthly, the hepatic plexus: seventhly, the splenic plexus: eighthly, the renal plexus: and ninthly, the lingual nerves.

PARACENTESIS. The operation of tapping, for the purpose of giving vent to water collected in the chest, abdomen, or tunica vaginalis of the testicle. A case has been recorded in the newspapers, of dropsy of the chest in the horse, being cured by this operation. I have performed it in a similar case, but without benefit.

PAR

I have also tapped a sheep affected with dropsy of the belly or ascites, and let off nearly a pailful of water; but it did no good.

PARALYSIS. See *Palsy*.

PARAPHYMOSIS. A contraction of the prepuce behind the *glans penis*.

PAREGORIC ELIXIR, or CAMPHORATED TINCTURE OF OPIUM. A preparation composed of

Hard purified opium, } of each one dram.
Flowers of benzoin, }
Camphor, two scruples.
Oil of anise-seed, one dram.
Proof spirit, two pints.

To be digested for three days, frequently shaking the mixture, and then strained off for use.

Paregoric elixir has been much used in human medicine for troublesome coughs; but it is by no means an eligible preparation for horses, on account of the large proportion of spirit it contains.

PARENCHYMA. The spongy and cellular substance that connects parts together.

PARIETAL. The bones which form the sides of the skull are thus named.

PARING, or Cutting the Hoof in order to prepare it for the shoe or other purposes. See *Shoeing*.

PAROTID GLANDS. Two large glands situated under the ears: they secrete saliva, which is conveyed by a duct, named from its discoverer, Stenonian, into the mouth. These glands sometimes become inflamed and swollen; which disease is, by farriers, named the Vives.

PAROXYSM. The periodical accession or the periodical increase of a disorder.

PARSNEPS. A root sometimes used as food for horses and cattle. Parsneps are very nutritious; and when properly cultivated, appear to contain a considerable proportion of farinaceous matter.

PARTURITION. The act of bringing forth young. In mares this is sometimes attended with difficulty; and more frequently so in cattle. See *Calving*, *Foaling*, and *Abortion*.

PAS

PASSAGE, or PASSAGING. A pace or manner of going that is taught to military horses. See *Pace*.

PASSION, ILIAC. See *Colic*.

PASTERN. The part between the **fetlock** joint and the hoof. (See *Foot*.) The pastern is the **seat** of ring-bone.

PASTERN BONES. There are two pastern bones, which are named the small and the large pastern. The former is connected below with the coffin bone, and above with the large pastern. The large pastern is connected above with the great metacarpal or cannon bone, and with the two sesamoid bones; with which latter it does not however form a moveable articulation.

PASTERN JOINTS. The articulations of the two pastern bones with each other, and with the great metacarpal or cannon bone above, and the coffin bone below. These joints are the seat of the disease named Ring-bone. See *Ringbone*.

PASTERN NERVE. The nerve from which a portion is cut out in the operation of nerving. See *Nerving*.

PASTURE. The natural pastures, which consist of a variety of grasses and herbs, are probably the most wholesome for horses and cattle. The artificial pastures are certainly much more nutritious and fattening, but are often, through imprudent management, productive of inflammatory and other disorders. The great variety of herbage in the natural pastures, and the moderate quantity produced, prevent the animal from filling his stomach too quickly, and oblige him to use sufficient exercise in obtaining the food; but the luxuriance of the artificial pastures enables him to fill his stomach quickly, and without much exertion, with grasses of the most nutritious kind. In this case, the stomach is sometimes so overloaded as to prevent digestion, and the food, in consequence, ferments in the stomach and blows or blasts the animal. (See *Blasting*.) Sometimes the digestive function is vigorous, and then so much blood is formed that the blood-vessels are overloaded, and inflammatory diseases are produced; more frequently, however, both the digestive and sanguiferous systems are thrown into disorder. From these two circumstances a third arises,

PAT

and that is a sluggishness and disposition to sleep, which induces the animal to lie down with a loaded stomach and blood-vessels during the cold fogs, which happen at the latter part of the summer and autumn. The torpor of the nervous system during sleep causes the blood to recede from the surface of the body and fall upon the lungs, the brain, and other vital organs ; and it is worthy of remark that, in such cases, the spleen, or milt, becomes enlarged or distended with blood. The pastures near great towns, which in general are highly manured, are not so good for horses as upland pastures that are not so forced ; and, in summer, the pasture of some commons is, perhaps, more conducive to health than any other, as the intention in turning a horse to grass is not to fatten him, and thereby weaken his stomach, overload the blood-vessels, and make him heavy and sluggish, but merely to give him rest, and a moderate quantity of green food. Short, sweet pastures, in elevated situations, are by far the best for horses ; and though cattle may fatten sooner in rich meadows, it is certain that there would be less danger of contracting disease, and probable that the flesh would be much better flavoured in less succulent pastures. A proof of this may be found in the mutton fed on the Welsh mountains, and some of the commons in Devonshire. In a country, however, where horses and cattle are so numerous, the artificial grasses, as well as the saccharine and farinaceous roots, are extremely useful, and would be found much more so than they are, were animals fed more carefully upon them ; for it is well known that many cattle are destroyed and a great number of diseases induced by over-feeding on such nutritious food. See *Soiling* and *Fattening*.

PATELLA. The knee-pan of the human body, and the stifle of the horse. See *Stifle* and *Skeleton*.

PATHOGNOMONIC SYMPTOMS, or *Signs*, are those by which the character of a disease is known.

PATHOLOGY. The science of medicine ; or, more literally, the doctrine of diseases.

PATTEN SHOE. A shoe with an arched cross-bar at the bottom for the purpose of raising the foot three or four inches from the ground, and thereby forcing the

PAU—PEL

horse to use the other leg more, or in a different manner from what he otherwise would. I have seen it do good in obstinate lameness of the hind leg.

PAUNCH. The common name for the first stomach of the cow and other ruminating animals. In cows, the paunch is of an enormous size, and sometimes so distended with air, in consequence of the animal feeding greedily on clover, vetches, or rank autumnal grass, that suffocation ensues. In urgent cases of this kind an operation is performed for giving vent to the confined air, which is named Paunching.

PAUNCHING. This consists in plunging a sharp knife into the left flank, where it is most blown up; that is, between the last rib and the hip bone. In some cases it has been found necessary to make an opening of sufficient size to draw out the fermenting food. When the air has been let out, if the wound be large, a stitch or two should be put in the skin only, and the parts kept together by a pitch plaster. See *Blasting*.

PEAS. Dried peas are sometimes used as food for horses, but are considered inferior to beans. After the peas have been threshed out, the stalks, or haulms, as they are termed, are given to horses and cattle, but are difficult of digestion, contain scarcely any nutriment, and had much better be thrown upon the dung-heap than applied to such a purpose.

PECTORALS. Medicines that relieve cough and other diseases of the lungs.

PECTORAL MUSCLES. Two muscles of the breast, named the great and the small, or the internal and external Pectoral.

PEDILUVIUM. A bath for the feet. In inflammatory affections of the horse's feet it is of great use to soak them in water, which is most conveniently done by wrapping a cloth round the pastern, coronet, and hoof, and keeping it constantly wet.

PELLITORY. *Radix Pyrethræ*, or Pellitory of Spain, is a powerful stimulus to the salivary glands, exciting a copious flow of saliva when put into a horse's mouth. In old books of farriery, chewing-bits are prescribed, in which

PEL—PER

pellitory is an ingredient. The preparation is confined by cloth round the snaffle bit, or a ball is placed between the grinders.

PELVIS. The basin, or that cavity wherein is lodged the bladder, uterus, and the rectum. The bones of the pelvis are in fact only one bone, but nominally divided into Ilium, Ischium, and Pubis. See *Skeleton*.

PENIS. The yard, or male genital organ.

PENNYROYAL. An aromatic and carminative herb, an infusion of which may be a useful vehicle for more powerful medicines of that kind.

PEPPER. There are several kinds of pepper, all of them of a very hot or stimulating nature. The strongest is the Guinea Pepper, or Capsicum; the mildest, and by far the best, is the Jamaica Pepper, or Allspice. The other kinds of pepper are Black Pepper and Long Pepper. There are some herbs of this name, such as Poor Man's Pepper, or *Polygonum Hydropiper*, and Pepper Cress.

PERCOLATION. The straining of a liquid through any substance in order to purify it. It is named also Filtration.

PERFORANS TENDON. The innermost of the back sinews, or that which goes down to the bottom of the coffin bone. See *Foot*.

PERICARDIUM. The heart-bag. See *Heart*.

PERICONDRIUM. The membrane which covers a cartilage.

PERICRANIUM. The membrane that is closely connected to the bones of the head.

PERINÆUM. The space between the anus and testicles.

PERIOSTEUM. The investing membrane of the bones.

PERIPNEUMONY. Inflammation of the lungs. See *Lungs, inflamed*.

PERISTALTIC MOTION. That motion of the muscular coat of the bowels which causes the food and excrement to pass through them.

PERITONEUM. The membrane which forms the external coat of the bowels and some other of the viscera

PER

of the abdomen ; it is therefore named the Peritoneal Coat of the Bowels. It lines also all the internal surface of the belly, or rather incloses all the bowels as a bag.

PERITONITIS. Peritoneal inflammation. See *Bowels*.

PERIWINKLE. This plant was formerly esteemed as a vulnerary and astringent, and, with Ethiop's mineral, formed a celebrated French remedy for glanders. It is now considered useless.

PERSPIRATION. The fluid or vapour which is secreted by the arteries of the skin. It is distinguished into sensible and insensible ; in the latter state it passes off in invisible vapour ; in the former, so as to be visible, as sweat.

Perspiration is a highly important discharge in horses and other quadrupeds ; in some animals however, as the dog, there is no visible perspiration ; but in such animals the vapour thrown off from the lungs is proportionably abundant. In the human body perspiration is easily promoted by medicine, but in the horse and other domestic animals this is not the case ; indeed we are not acquainted with any medicine which will excite sweating in the horse, except it be such substances as will produce violent irritation or inflammation of the stomach and bowels ; and we observe generally, that, when these parts are inflamed, profuse perspiration will break out in the paroxysms of pain. Many of the diseases of horses and cattle are caused by suppressed or checked perspiration ; the various appearances they assume depending perhaps in a great measure upon the suddenness with which the discharge is stopped, and the state of the animal at the time it takes place. Thus if a horse, after being heated and made to sweat by exercise, and then suffered to stand still, be exposed to a cold wind or rain, a fever, or inflammation of some internal organ, will probably be the consequence ; and the disease thus produced will be still more serious, if the horse's exercise have been such as to produce considerable fatigue. If, on the other hand, a cold current of air be admitted to a horse's body as he stands in a stable, it will often cause a catarrh or cold. Cattle often suffer from being kept in cold bleak situations, particularly in the early part of

PER—PHA

spring during the prevalence of an easterly wind; in this case the suppression of the discharge is more gradual, and the diseases which result from it are slower in their progress, consequently more insidious in their nature; and it often happens, that the animal is left in the same cold situation until the disease is incurable. It seems probable that in these cases the perspirable vessels gradually lose their power, and that at length a total and permanent suppression of that necessary discharge takes place: hence arise consumptions, decayed liver, rot, mesenteric obstructions, and various other complaints. How necessary therefore is it for proprietors of cattle to be provided with sheltered situations for their stock! How many diseases might they prevent by such precaution, and how much might they save, not only in preserving the lives of their cattle, but in avoiding the expense (too often useless, to say the best of it,) of cattle-doctoring!

PERUVIAN BALSAM. See *Balsam*.

PERUVIAN BARK. See *Bark*.

PESSARY. An instrument for keeping the womb in its situation after the accident termed Inversion of the Uterus, or *Prolapsus Uteri*. Such accidents sometimes happen to cows after difficult calving, but less frequently to mares. See *Calving* and *Foaling*.

PESTIS. Pestilence, pest, or murrain. In a milder form it is named Distemper or Influenza. Epizootic diseases are not so frequent now as they were formerly; and when they do occur, are much milder and less contagious than those we find recorded in ancient books on horses and cattle. See *Distemper*, *Murrain*, and *Epidemic Catarrh*.

PETROLEUM. Rock oil, or liquid bitumen, is so named. There are several kinds; the purest is named Naphtha, but the only kind used for veterinary purposes is the *Petroleum Barbadosense*, or Barbadoes Tar. This is generally mixed with oil of turpentine and a green oil, made by boiling green vegetables or leaves in olive oil.

PHAGEDÆNA. A spreading ulcer. A farcy sore, produced by inoculation, for example, is called a phagedenic ulcer.

PHA—PHY

PHARMACEUTICAL. Any thing belonging to pharmacy.

PHARMACOPŒIA. A book which describes the method of compounding medicines.

PHARMACY. The art of preparing medicines.

PHARYNX. The upper part of the œsophagus or gullet.

PHIMOSIS. A contraction and swelling of the foreskin or sheath, which prevents the horse from drawing his penis to make water. Bleed, give some opening medicine, keep the patient on a low opening diet, and apply emollient fomentations to the part. If the disorder continue after the operation of the opening medicine, give small doses of nitre twice a day, and let the horse have regular exercise.

PHLEBOTOMY. The operation of drawing blood from a vein. (See *Bleeding*.)

PHLEGM. A mucous liquid thrown up from the lungs.

PHLEGMON. An inflamed swelling.

PHLOGOSIS. Inflammation.

PHOSPHATES. Salts formed from phosphoric acid.

PHOSPHORUS. A solid, inflammable substance, procured chiefly from the decomposition of phosphoric acid, in bones (which contain phosphate of lime), urine, &c. It burns slowly, and with a bluish light, in the common temperature of the atmosphere. Some experiments on animals were instituted at the veterinary college, for the purpose of ascertaining its medicinal qualities, when it was found to be poisonous.

PHRENIC NERVE. A nerve which passes through the thorax, over the pericardium to the diaphragm.

PHRENITIS. (See *Phrenzy* and *Brain*.)

PHRENZY. *Phrenitis*, or frenzy fever. Inflammation of the brain, in such a degree as to produce delirium or mad staggers. See *Staggers* and *Brain*.

PHTHISIS PULMONALIS. A disease of the lungs. See *Consumption*.

PHYSIC. In stable language, the term physic is applied to purgative medicine. See *Purgatives*

PHYSICKING. This is a process of some importance, as a horse's bowels are very liable to be inflamed by it

PHY

when improperly conducted. Two or three days before giving physic, the horse should have but a small quantity of hay and bran mashes twice or three times a day. The physic should be given in the morning, fasting, and, about an hour or two after, a small, thin bran mash, which may be repeated in about three hours. A little warm water may be allowed, and a very little hay in the evening. The next morning, after eating a small thin mash, the horse should be taken out in some warm situation for walking exercise. On his return he may have some water with the chill off, and, a short time after, another mash. The physic generally works the morning after it is taken; but if the horse is not purged during his morning's exercise, or soon after, and especially if he appears sick or griped, a clyster of warm water or gruel, with a little salt and oil in it, should be thrown up, and the horse be again exercised. (See *Clyster*.) During this day he should be fed chiefly with bran mashes, or, if a little hay be given, it should be in small quantity. It is not desirable that the purging should continue longer than the second day; and, if the horse is found to purge the following morning, some arrow-root gruel, or wheat flour gruel, may be given. After this the horse should be gradually brought to his usual diet, but should not be worked till two or three days after the operation of the physic has ceased. If it be thought requisite to give more than one dose of physic, an interval of a week or ten days should elapse before the exhibition of a second purgative. When horses are taken from grass, or a straw-yard, it has been thought necessary to give three doses of physic, in order to bring them into good condition: there is, however, no necessity for this; and, it is probable, that, if a horse be brought gradually from either of these situations to the stable, medicine may be dispensed with altogether. See *Diet, Food, Feeding, and Stable Management*.

PHYSIOLOGY. That branch of medical science which describes the functions of every part of the body. This definition of the term, however, is given under the opinion, that the science of medicine comprehends ana-

PIA—PLA

tomy, physiology, pathology, therapeutics, and, in short, every thing that has any relation to the cure and prevention of disease.

PIAFFEUR. A term in horsemanship, applied to a horse that prances, or moves in a stately manner, at rather a slow pace.

PIA MATER. A delicate membrane that closely invests the brain, so as to appear almost as a part of its substance. See *Brain*.

PICKER. An instrument for picking out dirt or stones from the feet of horses. Every one who rides much should keep such an instrument about him.

PIMENTO. Allspice. See *Allspice*.

PINEAL GLAND. A small glandular body in the brain, situated immediately over the *corpora quadrigemina*, and hanging, by two peduncles, from the *thalami nervorum opticorum*. Its use is not known.

PINNING up the vein after bleeding. See *Bleeding*.

PISSING BLOOD. See *Urinary Organs*, and *Red-water*.

PITCH. Common pitch is sometimes used in the composition of plasters or charges. If used alone as a plaster, it is too brittle; it requires, therefore, to be softened a little with tar, or tar and bees' wax.

PITCH, BURGUNDY. A resin obtained from the Norway spruce-fir. It is used in the composition of plasters and charges.

PITUITARY GLAND. A gland situated in that part of the skull named *Sella Turcica*, which is a depression in the sphenoid bone, so named from a supposed resemblance to a Turkish saddle. Its use is not known.

PITUITARY MEMBRANE. The red membrane which covers all the internal parts of the nose.

PLACENTA. The after-birth. See *Foaling*, *Calving*, and *Abortion*.

PLANCH SHOE. A plate shoe, *i. e.* a wide shoe for defending the sole of the foot when thin and tender.

PLANET-STRUCK. See *Catalepsy*.

PLASTER. A composition of resin and wax, or pitch. See *Charge*.

PLATE VEIN. A large vein that runs from the in-

PLE

side of the fore leg to the chest. It is sometimes opened by farriers in cases of shoulder lameness. See *Lameness* and *Strains*.

PLETHORA. Fulness of the blood-vessels. Horses are often brought into this state from over-feeding and want of sufficient exercise. It is known by heaviness, dulness, unwillingness to work, redness of the coats of the eye, observable upon raising the upper eyelid, or separating the eyelids from each other. The urine is high coloured, and the dung generally hard and sometimes slimy. The remedies are, bleeding, an opening diet of bran mash and only a small quantity of hay, emollient clysters, and regular but moderate exercise. When the body is in a plethoric state, there is a danger of inflammation taking place in some of the vital organs, especially if the horse happens to be ridden hard, or suddenly chilled when heated by exercise. When cattle are fattening, they are generally in this state, and, if driven about too much, or made to use violent exercise, are liable to inflammation of the lungs or brain; a disorder whose termination is frequently fatal, especially when horses or cattle, attacked by it while at grass, lie down at night in the cold fogs with loaded stomachs, whereby they become chilled, and the blood determined to the internal parts. When the blood-vessels are too full, and the stomach loaded, there is always a disposition to sleep, during which, animals are more liable to be chilled than at any other time.

PLEURA. The membrane which covers the lungs, so closely as to appear part of their substance; it is denominated *Pleura Pulmonalis*: where the pleura lines the inside of the chest, it is called *Pleura Costalis*.

PLEURISY. *Pleuritis*; inflammation of the pleura. In pleurisy there is great difficulty of breathing, and pain in the side; the pulse is quick, the mouth hot and dry, or clammy; there is little or no appetite, the urine is high coloured, the dung hard and slimy, and the membranes of the eye red. Bleed until the horse become faint, open the bowels with emollient clysters, and, if they be not sufficient, let the following drench be given:

PLE—POL

Take, of Epsom salts, eight ounces.

Water, or thin gruel, one quart.—Mix for one dose, which may be repeated eight hours after, if necessary.

Should the symptoms continue, bleed again, and blister the sides. When the appetite returns, the horse must be fed cautiously with bran mashes or a little grass. The best situation is a cool box, and, in temperate weather, a paddock or field where there is shelter from the sun and rain. Pleuritic inflammation, unless put a stop to by copious bleeding, soon spreads to every part of the lungs. See *Lungs, Inflammation of*.

PLEXUS. A network of blood-vessels or nerves.

PLEXUS CHOROIDES. A plexus of blood-vessels in the lateral ventricles of the brain.

PNEUMATOCELE. A tumour or swelling containing air.

PNEUMATOSIS. A swelling containing air, as those swellings which take place in quarter-evil.

PNEUMONIA. A general term for inflammation of the lungs, comprehending pleurisy, peripneumony, and bronchial or catarrhal inflammation.

POISON. Horses and cattle are seldom poisoned; such accidents however having occurred, it will be useful to point out the best method of treating them under such circumstances. The symptoms are, great depression of spirit, quick small pulse, sickness and loss of appetite, and sometimes griping and purging. When arsenic or corrosive sublimate have been given, a solution of white soap is perhaps as good an antidote as any, and should be followed up by drenches of linseed tea, gum-arabic dissolved in water, or the whites of several eggs beat together. The best antidote to preparations of lead is a solution of common salt and liver of sulphur, given in repeated doses, until purging be produced. (See *Minding*.) The effects of vegetable poisons, such as water-hemlock, water-fennel, foxglove, &c., are best counteracted by diluted vinegar.

POLLARD. A fine kind of bran, called also Gurgings or Gudgings. It appears to contain a little flour, and is therefore more nutritious, and probably less opening, than bran.

POLL EVIL. An obstinate disease, which often hap-

POL

pens to horses. It generally proceeds from a blow received upon the poll or back part of the head. Sometimes the injury thus inflicted is superficial, and easily cured by fomentation, &c.; more frequently, however, the vascular membrane, between the under surface and the great suspensory ligament of the neck and the first vertebra, is the part principally hurt: in consequence it becomes inflamed, and suppuration takes place. The matter, having no vent, spreads in various directions, or where there is the least resistance; and both the bone and ligament are affected before any external swelling can be observed. Thus an obstinate disease is established before its existence is suspected, as the only indication of it is a stiffness in the motions of the head. Several months have elapsed in some instances before any external swelling has been perceived; and then some mode of repelling the tumour is often adopted; such as stimulating or blistering liniments, &c., which cannot of course be effectual in accomplishing the object for which they are used: they may, however, promote the progress of the matter to the surface, and bring the swelling to a proper state to be opened. When this has been done, a free and extensive incision should be made, so that the finger may be introduced, and the length and direction of the sinuses or pipes ascertained; all these should be freely opened also, and though the bleeding which ensues may have a formidable appearance, it may always be stopped by pressure. When the bleeding has ceased, some caustic composition should be applied to all the diseased parts; such as butter of antimony, solution of sublimate in muriatic acid, or of quicksilver in nitrous acid, or the *scalding mixture*, which, if neatly applied, so as not to injure sound parts, is perhaps as effectual as any. (See *Fistula*.) Two or three days after, the dead parts should be washed off, and if any more sinuses are discovered, they should be laid open freely, and the caustic dressing again applied. When a proper opening has been made, we can often feel, by introducing the finger, the diseased surface of the bone; a narrow blunt-pointed knife should then be introduced, or any convenient instrument, by which the rotten surface of the bone may be scraped off, as well as any part of the liga-

POL—POR

ment which may be found in the same state. The cure will be expedited also by cutting away any callous matter that may be found within the lips of the external opening. In some instances it has taken several months to effect a cure of poll evil; and I have found, from much experience, that the most effectual and expeditious remedies are cutting freely and caustic dressings; as the following:

Take, of Corrosive sublimate, one dram.

Verdigris, two drams.

Treacle, three ounces.

Vinegar, three ounces.—Mix.

Or,

Take, of Corrosive sublimate, two drams.

Muriatic acid, three drams.—Mix, and add,

Oil of turpentine, four ounces.

Train oil, four ounces.—Mix, and apply scalding hot.

When the wound has been brought to a healing state, mild dressings, such as Friar's balsam or digestive ointment, should be used. See vol. i. of *White's Farriery*.

POLYCHREST SALT, or **SAL POLYCHREST**, now named Sulphate of Potash. A laxative salt, seldom used in veterinary practice.

POMUM ADAMI. The projecting part of the larynx, or top of the windpipe.

POPE'S EYE. The popliteal gland, and fat connected with it.

POPLITEAL, a name applied to blood-vessels, &c., situated in the ham. From the Latin word *Poples*, the ham.

POPPY. The dried capsules or heads of white poppies are used for anodyne fomentations. Opium is obtained from the white poppy. See *Opium*.

POPULEON, or **POMPILION**. The name of an ointment, supposed to be made from the leaves or buds of the poplar-tree boiled in hogs' lard; but in reality, from such green vegetables as are most readily procured; and probably, sometimes by colouring hogs' lard with a little verdigris. In all cases, hogs' lard may be safely used as a substitute for it.

PORTA. The name of the great vein of the liver.

POT—POU

POTASH. The vegetable alkali, or kali. Pure potash is a powerful caustic; but when combined with carbonic acid, it becomes mild, and is named Carbonate of Potash. The common potash, or pearlash, of the shops, is not sufficiently pure for medicinal purposes; and when dissolved in water, strained, and the water again evaporated from it, is sold under the name of Salt of Tartar, Salt of Wormwood, or Prepared Kali. When saturated with carbonic acid, it assumes the crystalline form, and in that state is most mild and best adapted for medicinal use. This is now named Carbonate, or Super-Carbonate of Potash, and is the preparation most commonly employed.

POULTICE, or CATAPLASM. There are different kinds of poultices; viz. the emollient, the anodyne, the fermenting, and the astringent. The emollient poultice is made by pouring boiling water on bran, so as to make a thin mash, and stirring into it a little linseed meal and hogs' lard. Boiled turnips make a good emollient poultice. The anodyne poultice is made by employing a strong decoction of poppy heads instead of water, in making the emollient poultice. The fermenting poultice is composed of bran mash, oatmeal, and a little yeast: and the astringent poultice of a thin bran mash, with a suitable proportion of sugar of lead, alum, or white or blue vitriol. The sugar of lead is the mildest astringent; and, when much diluted, may possess an anodyne quality. Alum is a mild and very useful astringent; but blue vitriol, unless much diluted, acts as a caustic. The sugar of lead poultice, and perhaps the alum poultice also, may be strengthened by the addition of a little vinegar; or vinegar alone, added to a thick bran mash, may form a good astringent cataplasm. The emollient poultice is useful in all inflammatory swellings, as in acute cases of grease, scratches, cracks, and strains of the back sinews. In inveterate cases of grease, the astringent poultice made with blue vitriol has been found serviceable. The efficacy of a poultice depends upon its being properly applied, and kept constantly in a state of moisture: a small poultice which is suffered to become dry, often does more harm than good. In strains of the back sinews, for example, the poultice should be applied by means of a large worsted stocking

PRE—PRI

with the foot cut off, or a long flannel bag, sufficiently large for the foot to pass through easily. The lower part is to be tied round the hoof, and when the bag has been filled with poultice as high as the knee, the upper part is to be bound with listing moderately tight above the knee, and made still more secure by carrying the binding over the shoulder.

PRECIPITATE. This term is applied, generally, to powders which are obtained by adding certain liquids to solutions of metals or earths. If to a solution of blue vitriol, for example, we add a solution of potash, the liquor will become very turbid; and, after a time, a substance will fall to the bottom of the vessel. After pouring off the liquid from this, and drying it, we have what may be called a precipitate, or carbonate of copper. The term *precipitate*, however, is applied more particularly to the preparations of mercury or quicksilver, commonly named White and Red Precipitate; or according to the London Dispensatory, White Precipitated Mercury, and Red Nitric Oxyd of Mercury.

PREPUCE. The sheath or foreskin of the penis or yard.

PREVENTION OF DISEASE. It is an old but true saying, that prevention is better than cure; and we may safely add, that it is easier and less expensive. In horses and cattle, it is probable that almost all diseases may be prevented by judicious management with regard to breeding, rearing, feeding, exercise, labour, and situation.

PRICKS, or PRICKING. In shoeing a horse, the nail is sometimes driven in a wrong direction, and the sensible parts are wounded; he is then said to be pricked. The smith often endeavours to conceal the injury by withdrawing the nail, and filling the hole with the head only of a nail. Lameness is not often the immediate consequence; and when it takes place, the cause perhaps is not suspected. Sometimes the nail is driven so as not to wound the sensible parts, but so near them, as by its pressure to bring on, gradually, inflammation and lameness: in this case the lameness may not take place till many days after the injury has been received.

PRI—PRO

When a horse has been slightly pricked, and the nail immediately withdrawn, it may not be followed by lameness; but when the wound is considerable, and particularly if the nail has been suffered to remain, violent inflammation very soon ensues, which generally terminates in suppuration. If the matter is not let out by paring away the horn, it quickly spreads under the horny sole, and upwards through the laminated substance of the foot, and at length breaks out at the coronet. The first thing to be done when a horse has been pricked, is to enlarge the opening made by the nail in the horny part, and pare away a little of the surrounding sole: some Friar's balsam or tincture of myrrh is then to be poured on it, and the horse should be suffered to stand in the stable without a shoe. If inflammation comes on, which may be known by the heat of the foot and the lameness it occasions, let a poultice be applied. Should the lameness increase, it is probable that matter will form; the part is then to be again pared; and when a drop of dark-coloured matter is seen, the opening must be farther enlarged, so that a probe may be introduced to ascertain in what direction it has penetrated. As much of the horny sole as has been separated from the sensitive sole by the matter is to be removed, and the diseased part washed with some astringent lotion, such as a solution of white or blue vitriol, or some tincture of myrrh or benzoin: digestive ointment spread on tow is then to be bound on, and the same dressing is to be repeated daily, until new horn is formed on the part. A more detailed account of this subject may be seen in my work on *Veterinary Medicine*.

PRIMÆ VIÆ. The first passages, or stomach and small intestines. See *Stomach and Intestines*.

PROBANG. An instrument for removing any obstruction in the œsophagus or gullet. It consists of a rather flexible rod of cane or whalebone, covered with leather, with a round smooth knob at one end, about the size of a pigeon's egg. In horses, this instrument is used for forcing down a ball when it has lodged or stuck in any part of the gullet. In horned cattle and

PRO—PUL

sheep, it is employed to let out air from the stomach when they are hoven or blasted. (See *Blasting*.) The probang most approved of, is that invented by Doctor Munro. It may be purchased at Mr. Long's, veterinary instrument maker, High Holborn, London.

PROBE. An instrument for examining wounds when there are hollow parts, pipes, or sinuses connected with them. They are made of silver, whalebone, lead, or iron wire tipped with lead.

PROCIDENTIA. The falling down of a part, as of the uterus or fundament.

PROFLUVIA. Fluxes; such as diarrhœa, scouring, and red-water.

PROGNOSIS. The art of foretelling, by certain symptoms, the approach, intensity, termination, &c. of a disease.

PROLAPSUS. See *Procidentia*.

PROPHYLACTICS. The means made use of to prevent diseases.

PROSTATE GLAND. A mucous gland situated near the neck of the bladder in man, but scarcely observable in the horse.

PRURIGO. An itching complaint of the skin. See *Mange*, and *Cutaneous Diseases*.

PRUSSIATES. Salts formed from prussic acid. They are not used in veterinary medicine.

PRUSSIC ACID. A powerful poison; but now sometimes used in human medicine. It has not yet, I believe, been tried on the horse.

PSOAS MUSCLES. The muscles that lie under the loins. These muscles are sometimes injured in strains of the loins. See *Strains*.

PSORA. The itch. See *Mange*, and *Cutaneous Diseases*.

PTYALISM. Salivation, or an increased flow of saliva, and soreness of the mouth.

PULMONARY DISEASES. Diseases of the lungs. See *Lungs*.

PULMONARY VESSELS. The blood-vessels and air-vessels of the lungs, which consist of the pulmonary artery and vein, and the bronchia, or branches of the windpipe.

PUL

PULSE. The beating of the arteries. The horse's pulse is most conveniently felt in that branch of the carotid artery which passes under the jaw bone; in the temporal artery, about an inch and a half from the outer corner of the eye; and in the carotid artery at the lower part of the neck, in the course of the neck-vein; it may be felt, indeed, in any superficial artery, but that first named is the best. The number of pulsations in a given time may also be felt by pressing the hand on the left side near the elbow; but in this situation a judgment cannot so easily be formed of several circumstances respecting the pulse, which it is necessary to know; that is, whether it be hard or soft, small or full. The pulsation of the arteries depends upon the blood which is thrown into them by the contraction of the left ventricle of the heart (see *Heart*): the state of the pulse, therefore, may indicate the strength of the heart's contractions, the quantity of blood thrown out at each contraction, the number of contractions in a minute or any given time, the regularity of its action, and the strength of the action of the arteries. The numerous distinctions made by physicians with regard to the pulse need not be noticed in a veterinary dictionary. The principal circumstances to be attended to are, first, its frequency, or the number of pulsations in a minute, which in the healthy horse is about forty; next, its strength: when the contraction of the heart is strong, the pulse is felt distinctly, though the artery be pressed moderately with the finger; but when weak, very little pressure will prevent its being felt. When the artery is too irritable and in strong action, it will contract quickly upon the blood it receives, and the impression or sensation conveyed by the finger will be short, or that which is expressed by hardness: when the swell of the artery is more slow or soft, it denotes the contrary state. Thus there may be a frequent, or as it is more commonly named, a quick pulse, a strong pulse or a weak pulse, and a hard pulse or a soft pulse. To this may be added the irregular or intermitting pulse; which of course indicates an irregularity in the contractions of the heart, and sometimes happens when the

PUM—PUR

horse does not labour under any serious disorder. Those who wish to attend to the diseases of horses, should make themselves familiar with the state of the pulse, both in health and disease: and they will learn from experience, that it will enable them to judge better of the nature and probable event of a disease, than any other single circumstance. In the latter periods of pregnancy, the pulse of a cow, which in health varies from sixty to seventy beats in a minute, becomes quicker; and when within a few days of calving, generally rises up to eighty or ninety.

PUMICE FOOT. See *Foot*.

PUNCTA LACHRYMALIA. Two small orifices near the inner corner of the eye, through which the tears pass off.

PUNCTURED WOUNDS. See *Wounds*.

PUPIL. The apple of the eye. See *Eye*.

PURCHASE OF HORSES. It is an old saying, but a very good one, that when you are examining a horse you wish to purchase, you should keep your ears shut and your eyes open; that is to say, you should not listen to any thing that is said in praise of the horse, neither by the seller or those who may be standing by at the time; but if satisfied with his appearance, you should ride him home, and examine him without fear of interruption. It has been said, and perhaps very justly, that a good horse cannot be of a bad colour; but, as the good qualities of the animal cannot be known without a sufficient trial, and as those qualities are in some degree indicated by colour and other external appearances, it may not be amiss to make a few observations upon this subject. The best colours are bay and brown, with black legs, and a star in the forehead. Grey and chestnut horses are said to be more subject to bad eyes than others; this, however, is doubtful. The light greys gradually become white, and are difficult to be kept clean. Black horses with white legs, are liable to grease; and chestnut horses, with white fore feet, to corns and other diseases of the feet. A horse with a large heavy head, especially if his shoulders be clumsy, and his fore legs rather under him, is more likely to have bad eyes and to stumble than others. Such a horse, however, may do well enough

PUR

for draught. A horse that is flat-sided, narrow in the chest, hollow in the flanks, and small in the carcass, or, in the jockey phrase, standing with too much day-light under him, is generally of a tender constitution, and incapable of much labour. The elbows should not incline too much inwards; in that case the toes are generally inclined outwards, and the horse is apt to cut. The higher part of the fore leg should be large and muscular; the lower part between the knee and the fetlock should be straight, flat, and sinewy, the back sinew standing out, distinctly marked from the ligament which lies under it. The pastern should be neither too short and straight, nor too long and slanting. An upright, tottering pastern is an indication of approaching lameness and stumbling. A horse should be well let down, as it is termed, in his hind limbs; that is, the thigh, from the hip to the back, should be deep, muscular, and the muscles well marked. The hocks should be lean, flat, free from puffs, and not inclining towards each other, but in a straight line with the fetlock joint. A horse whose hocks approach each other behind is said to be cat-hammed, or sickle-hammed, and is liable to curbs and spavins, especially when employed in hunting or carrying much weight. Being satisfied with the appearance and shape of a horse, the purchaser should next examine him in order to discover if he be sound or not. Few people are able to do this properly, and, therefore, I would recommend the inexperienced to ask the opinion of a veterinary surgeon on this subject. A description of those disorders which I may have occasion to notice in the remainder of this article will be found under their respective titles. In the first place, then, in order to see if a horse be free from lameness, let him be *trotted* gently down hill; and, when this is done, take care that the person who leads him holds the halter or bridle at full length, for many a horse may be made to conceal a slight lameness by bearing his head well up, and supporting or checking him whenever the lame leg comes to the ground. By no means suffer the horse to canter until you be quite certain that he goes perfectly sound at a walk and trot; when thoroughly convinced

PUR

upon this point, let him be cantered, first leading with one foot, then with the other, and afterwards gallopped for some time, in order to ascertain the state of his wind. For this purpose let him be pulled up short, and then, standing close to him, you may distinctly hear if he sob, or appear otherwise much distressed; though these symptoms of bad wind may arise, in a slight degree, from want of exercise and improper feeding. Being satisfied with his paces (see *Paces*), proceed to examine his eyes, and for this purpose let him be led to the stable door, where, in a moderate light, which will both be sufficient for the desired inspection and for a certain dilatation of the pupil, make a diligent and careful investigation of both eyes (see *Eye*). If they be dull, cloudy, or watery; if the eyelids be partially closed; if white specks be seen in the pupils, or if these be of different sizes, the eyes may be considered unsound. The wind is next to be tried; and this may be done by first pinching the horse's throat, near the jaws, so as to make him cough. If the cough be short, husky, whistling, and frequently repeated, the lungs, in all probability, are diseased. In this case there will generally be some degree of drawing in of the flanks in expiration. (See *Asthma* and *Broken Wind*.) Roaring may generally be detected by the horse grunting on being struck suddenly and checked at the same moment. The feet should undergo a very attentive examination. The hoof should be black, even, tough, rather round, and free from sand-crack; the heel open; the frog perfect, and free from thrushes or raggedness; the bottom of the sole rather concave, and the lateral cartilages in a natural state. The legs should be carefully inspected, in order to detect any roughness of the hair about the coronet; quitters; marks of cutting, either about the pastern or knee; puffiness; blemishes; wind-galls; scratches, or rats' tails; enlargements from bruises or other causes; ringbones; splents; osselets; broken or bent knees; tottering legs; strains; grease; curbs; bog-spavins or thorough-pins; bone and blood spavins; capped hocks; enlargement of the stifle; marks of recent blistering, firing, stimulating embrocations or bandages, (as they are never used without a cause)

PUR

&c. &c. The mouth should be examined, both to ascertain the age of the horse and to see if he have barbs, paps, or gigs, defects in the grinding teeth, or marks of having been bishoped. The nose should be perfectly clean, and in order to discover if it have been recently wiped out, it is as well to pinch the nostrils for some time, when the horse, on letting them go, will snort, and if there be matter in the nose, it will appear in tolerable quantity. (See *Catarrh* and *Glanders*.) Other diseases of the horses, as Vives, Farcy, Moon-blindness, Arrests, Anticor, Flux, Fistula, Hide-bound, Mange, Mallenders, Palsy, Poll-Evil, &c. &c., will be found particularly described in this dictionary, and in my work on Veterinary Medicine and Farriery, to the third volume of which I must refer the reader for further advice to purchasers of horses. Before I conclude this article, however, I cannot refrain from counselling all those who are inexperienced to have a stamped warranty with any horse they may buy; to have a week's trial, and to lodge the money, if necessary, in the hands of a third person, *who may be trusted*, until the horse be approved of. Above all, if any marks or signs of disease be apparent about a horse, never apply to the owner or any one in league with him for an account of it, as he will be sure to attribute lameness or forging to fresh shoeing; broken knees to striking the legs against the manger or a leaping-bar; inflammation of the eyes to dust or hay seeds; blindness of one eye to a thorn; and, in short, will persuade any ignorant person, and frequently those who have some experience, that the vilest hack is invaluable, and the most foundered jade "*as sound as the day she was foaled*." Add to this the tricks that are taught to dealer's horses, the constant fear of the whip, the slamming of a door (at which sign they perhaps expect a sound threshing), and the perpetual state of restlessness in which they are kept, entirely preclude the possibility of a patient investigation, and frequently make the veriest slug pass for a horse of high courage and mettle. The practice of figging horses, or thrusting a piece of chewed ginger up the fundament, in order to make them carry their tails high, contributes certainly to improve their

PUR

appearance *for a time*, and is therefore a deception; though perhaps not so great a one as, when a horse has a corn in one foot, driving a small piece of flint in the other to make him step even; bishoping and blowing up the hollows over the eyes to give an appearance of youth, and giving shot and tallow as a temporary remedy for roaring. But these constitute a very small proportion of the tricks and knavery practised by most horse dealers, to know which would require a regular apprenticeship. Crib-biting, restiveness, shying, and other vices, can only be known after sufficient trial, by which also the defects of tripping, hard-mouth, bad feeding, quidding, weak constitution, and other defects may be ascertained.

PURGATIVES. These are more commonly known, in farriery, by the name of Physic. The most certain and effectual purgative for horses is aloës; but its effect may be promoted, and rendered more safe by the addition of other substances. The following formula is perhaps as good as any that can be employed:

Barbadoes aloës, from half an ounce to an ounce.

Soap, three or four drams.

Oil of anise-seed, half a dram.

Ginger, one dram.

Syrup or treacle, enough to form a ball.

The diseases in which purgatives are required are noticed under their respective names. As to the manner of *physicking* horses, as it is termed, it is only necessary to remark, that by giving the horse bran mashes for a day or two previous to the purgative its operation will generally be more safe and expeditious; that he should be allowed only a moderate quantity of hay the night before the physic is given, and none the following morning until four or five hours after the medicine has been given; indeed until the physic has completely expended its action on the bowels, hay should be given in a very small quantity at a time. About half an hour after taking the physic, a small thin bran mash should be given, and repeated three or four times during the day; a moderate quantity of water may also be given, at the summer temperature, or with the chill taken off. The next morning the horse should have walking exercise to

T

PUR—QUA

promote the purging, taking care that he be clothed when taken out, and not exposed to rain or a cold wind; nor should he be suffered to stand still. If he purge sufficiently, the exercise need not be repeated. During this day also he must have warm bran mash, a little water with the chill off now and then, and a small quantity of hay. On the third day the purging usually ceases; he must then return gradually to his former mode of keeping. (See *Veterinary Medicine*, vol. ii. and iii; see also *Physic*.) Calomel is sometimes a useful addition to purgatives, particularly when a horse has worms, or where considerable purging is thought necessary. Many substances that are employed as purgatives in the human subject have little or no effect on the horse, even in large doses; among these are jalap, bitter apple, rhubarb, and Glauber's salt. The latter however, as well as Epsom salt, will cause purging when given in large doses; common or table salt will also purge; but these saline purgatives are considered more useful for cattle than horses.

PURULENT. That which consists of *Pus*.

PUS. The white matter formed by the process of suppuration.

PYLORUS. The inferior portion of the stomach. See *Stomach*.

Q.

QUARTER ILL, or QUARTER EVIL. This is one of the most dangerous inflammatory disorders to which young cattle are subject: it generally attacks them at the age of from one to two years; is very rapid in its progress, and sometimes occurs with such violence as to be completely beyond the control of medicine. The causes of this disease are generally too liberal an indulgence of the appetite, or a sudden transition from poor keep to luxurious and nutritious diet; either of which, causing the formation of too great a quantity of blood, overloads the blood-vessels, and occasions violent inflammatory action of the system in general, and particularly of those parts more immediately concerned in carrying on the circulation of the blood, namely, the heart and lungs. The

QUARTER ILL

hind parts of the animal, being the most remote from the centre of circulation, are unable to return the blood to the heart as quickly as it is propelled towards them ; and this is particularly the case when the nervous energy of the body has been lessened by exposure to cold and wet ; hence the quarters are liable to swell, and it is this circumstance which has given rise to the name by which the disorder is commonly known. The approach of this complaint is generally indicated by the animal separating himself from his companions ; by his appearing dull, listless, and heavy, and by his refusing food. The more immediate symptoms are lameness, and swelling of the hind quarters, and occasionally of the shoulders or back. These swellings, when pressed, make a crackling noise, occasioned by the putrid state of the blood, which in becoming decomposed, generates that gas which finds its way into and distends the cellular membrane. The mouth and tongue are frequently found blistered in this disease ; and spring or summer is the season in which it is most prevalent.

As soon as an animal is seen to exhibit symptoms of quarter-ill, he should be let blood *until he faints* ; nothing short of this will do any good, and even this operation must be repeated if necessary. Drenches of Epsom or common salt should be administered by the mouth, and clysters of thin gruel, salt, and oil, should not be omitted. A spare diet, and keeping the animal in a moderately cool place, are to be strictly attended to. By these means the disease may be subdued ; and, when once overcome, those causes which induced it should be carefully avoided. Indeed, as prevention is always better than cure, it is far best to keep young stock of all kinds in pasture, where the herbage is not too luxuriant, and where they will consequently not be able to gorge themselves. As I am of opinion that this disorder is contagious, it will be proper, immediately on the death of any animal from this complaint, to bury him unskinned as quickly as possible. The fatality of this disease renders it a subject of great importance to breeders of cattle, as well as to farmers in general. It may not be amiss, before we conclude the subject, to describe another me-

QUA—QUI

thod of preventing this disorder, which, however absurd it may appear, is said to be generally practised in Cheshire and Staffordshire with success. "The animal having been properly secured, an incision is made in each foot, beginning at the division of the claws, and extending from two to three inches upward; a bluish vessel (vein) is then seen, which is to be drawn out by passing a crooked needle under it, and cut off with scissors. The wound is first dressed with escharotic powder, afterward with digestive ointment." In what manner this curious operation can prevent the disease in question, it is not easy to imagine; if they who confide in its efficacy take care not to feed their young cattle too hastily, or, as Mr. Lawrence expresses it, "not push them too forward in condition," the mystery will cease. Such a variety of names have been conferred on this disorder, that it appears necessary to give a list of them, which is taken from Mr. John Lawrence's *Treatise on Cattle: Shewt of Blood—Vomit of Blood—Blood in the Back—Blood in the Legs, or Crateuch—Blane in the Tongue, or Overflow of Blood—Striking in, or Rising of the Blood—Higham, or Iron Striking—Joint Murrain, or Garget—Black Quarter—Quarter-Evil—Black Leg.*

QUARTERS OF THE FOOT. See *Foot*.

QUASSIA. An Indian wood, of an intensely bitter taste. It has hitherto been little used as a horse medicine; but may probably be found a useful stomachic joined with aromatics.

QUICKSILVER or MERCURY. This metal affords many useful medicinal preparations; the principal of which are calomel, corrosive sublimate, red precipitate, white precipitate, Ethiop's mineral, cinnabar, and mercurial ointment.

QUIDDERS. Horses that, from a defect in the grinding teeth, are unable to masticate their hay, but reject it rolled up like a *quid* of tobacco, are by dealers named Quidders.

QUINSY. Sore Throat. This disease frequently occurs to horses, and is often a symptom of catarrh or cold. The chief symptom is great pain and difficulty in swallowing; it is generally accompanied with fever in a

QUITTOR.

greater or less degree. In the first place the animal should be let blood freely, and then the throat should be blistered. The head should be steamed frequently, and the horse should be offered some good gruel very often, on account of the difficulty with which he swallows. The head should be kept warm with a hood, and the legs well rubbed and bandaged. No medicine should be forced down the throat until the soreness is quite gone, and the horse is able to swallow freely; a laxative may then be given, or small doses of nitre and emetic tartar. A cool atmosphere is highly beneficial in this disorder, and therefore a paddock, barn, or large airy box, is the best situation for a horse attacked by it. See *Catarrh*.

QUITTOR. A fistulous sore in the coronet of the foot, generally on the inside. It is caused by bruises, or by matter forming in the lower parts of the foot from pricks in shoeing, bruises from gravel, neglected corns, &c.; and, having no vent below, working its way upward to the coronet. The opening of the quittor is generally small, so as to admit only of a common probe passing in; and, on examination, we often find the sinuses or pipes running to a considerable extent. Sometimes the lateral cartilage is affected, and may be felt with the probe; at others the sinus runs downwards, affecting the laminated substance; and in some cases even the coffin bone becomes carious. In slight cases, it will be sufficient to apply a solution of blue vitriol by means of a syringe; but in more severe cases, or such as are of long standing, it will be necessary to enlarge the opening, and destroy the callous sides of the sinus by some strong caustic. I have found corrosive sublimate the most effectual for this purpose. The best mode of applying it is to moisten a narrow slip of paper with butter of antimony, then strew upon it the powdered sublimate, and twist the paper up so as to bring it to a point. This is to be forced into the sinus with a whalebone probe. With these caustic slips of paper the sinuses are to be completely filled. In a few days, what farriers term a *core* will come out, that is, the parts destroyed by the caustic will separate from the living parts, and leave an open, healthy-looking sore, which is to be

RAC—RED

dressed daily with a solution of white or blue vitriol, or tincture of benzoin. See vol. i. and iii. of *White's Farriery*.

R.

RACK BONES. The vertebræ of the back.

RADIUS. The bone of the forearm.

RAGWORT, ST. JAMES'S WORT, OR STAGGERWORT, *Senecio Jacobæa* of Linnæus. A flowering plant that grows principally on moors and other moist situations; it flowers the second year. The leaves have a roughish, bitter, rather acrid, and very nauseous taste. A decoction of ragwort is said to have been of infinite service in epidemic camp dysentery. The plant is noticed here on account of its being supposed to possess a very noxious quality with respect to horses and cows; though sheep eat it greedily without being injured.

RAKING. See *Back-Raking*.

RAT TAILS. An absurd name given to a scurfy eruption on the back part of the legs, extending from the fetlock upward in distinct lines. After washing the part well with soap and water, apply mercurial ointment, or a mixture of lard and calomel.

REALGAR. Red arsenic. A combination of arsenic and sulphur. It is sometimes used as a caustic.

RECTUM. See *Intestines*.

RED LEAD. See *Lead*.

RED WATER. Under the article Bloody Urine, a disease of this kind has been noticed which sometimes happens to horses, and more commonly to mares; but the red water of cattle appears to be of a different nature. This disease often attacks cows, and is generally considered dangerous; unless the animal is seasonably relieved, it commonly proves fatal in seven or eight days. The first appearance that attracts notice is the cow separating herself from the rest of the herd, and having little or no appetite: the hair stands on end, the eyes are dull, and, when the disease is far advanced, appear sunk in the head; the urine is of a red colour, and voided after a considerable effort. The bowels at first are generally loose, but soon become costive; a circum-

RED WATER.

stance that must be guarded against. The disease is attended with fever. Give, in the first place, a pound of Glauber's salt in about two quarts of gruel, in order to clear the stomach and bowels; when this has operated, let the following drench be given:

Tincture of opium, half an ounce.

Acetate of lead, one dram.

Catechu, half an ounce.

Gruel, one quart.

Should this fail, the proportion of tincture of opium and acetate of lead should be increased, and perhaps the addition of some powdered alum may render it more effectual. Some writers have recommended turpentine, vitriolic acid, bole, bay berries, &c. This disease must be distinguished from inflammation of the kidneys; in which there is a constant desire to stale, while only a very small quantity of red-coloured urine is voided; there is a tenderness of the loins, stiffness of the motion of the hind parts, and fever; here bleeding would be proper, covering the loins with a sheep's skin, a dose of castor oil, and an anodyne clyster. Sometimes red water is produced by blows upon the loins, or by cattle ramping on each other. In this case bleeding and opening drenches are requisite.

DRENCH FOR RED WATER.

Barbadoes aloës, four to six drams.

Common salt, four to six ounces.

Ginger, two drams.

Water, one quart.

Anodyne carminative tincture (see *Colic*), two ounces.

Mix. Or when heat and fever are present,

Epsom salt, six to eight ounces.

Water, three-fourths of a pint.

Castor or olive oil, six to eight ounces. Mix.

Red water is frequently induced by drinking peat-pit water, which has occasioned the death of many cows. There is generally a very high degree of inflammatory action attendant on red water, and the late Dr. Jenner assured me, that the heart was almost always in a high state of inflammation, an observation which I have since ascertained to be correct. It is not improbable that

REP—RES

drinking a large quantity of water, and thereby forcing the kidneys to unusual action, may be the remote, and cold, by which the blood is determined to the internal parts of the body, the proximate cause of this disease. In all cases where inflammation is present, bleeding, purgatives, clysters, and a light diet are to be resorted to; but when debility and relaxation of the system are the principal symptoms, cordials and astringents, as alum and catechu, are more likely to be beneficial. In Sir George Mackenzie's Treatise on Sheep, there is a disease termed Red Water described, which appears to be very different from the foregoing. "It consists in an inflammation of the skin, that raises it into blisters, which contain a thin, reddish, and watery fluid. These continue for a short time, break, discharge this matter, and are followed by a blackish scab. In cases where the disease is violent a little blood should be taken. The sheep should be put into a fold by itself, the blisters slit up, and a little of the infusion of tobacco put into them; two ounces of sulphur mixed with treacle are to be given for three or four mornings successively. If this is found unsuccessful, mix with the above half an ounce of nitre; after which a dose of salts is to be given, and the body washed with lime water."

REPELLENTS. Such things as are supposed to possess the power of removing tumours, eruptions, &c., or rather of making them recede from the surface of the body.

RESIN or ROSIN. Yellow resin, mixed with an equal quantity of nitre and liver of antimony, is a good diuretic powder, and may be given in a horse's corn. Resin is used also in the composition of plasters and ointments.

RESP. A disease incident to sheep when first put to cole or Swedish turnip, and sometimes when put to common turnip, but in a slighter degree, and seldom fatal. It is not often fatal to aged sheep; but lamb hogs are so liable to it that they will often take it at a clover eddish, and sometimes die of it there. This, however, is a rare occurrence. In the *Farmer's Journal*, No. 372, there is a valuable communication on this sub-

RESP.

ject, by Mr. Benjamin Holditch, in which he points out an effectual method of preventing this disorder. He directs about a dram and a half of pearlash to be dissolved in half a pint of water, and given to each sheep the second and fourth morning or evening from the time of putting them to the keep. The drench may be easily given with a flat bottle, such as fish sauce is sold in. The symptoms are, the sheep manifesting great uneasiness, neglecting his food, hunting for what he can get round the outsides of the field, bleating, signs of sickness and languor; all which never fail to show themselves. Some sheep escape with only being very sick and enfeebled for a few days, having gaunt bellies, and loathing their food, a slight strangury, and temporary loss of condition; while others stale blood, in addition to all the other symptoms, in an aggravated degree, which not unfrequently terminate in death. Those which are the most severely affected are distinguished by their drowsiness; they will not move with their fellows, but, if forced to get up, lie down again almost immediately; these seldom recover, and generally do not live above four or six hours after they are perceived to droop; they die on the belly, with the nose resting on the ground. The head totters towards the last; there is a viscid white froth in the mouth; but they never struggle, nor do they soon blow up after death. This disorder appears to arise from indigestion and repletion of the blood-vessels; and as there is always more or less of acid formed in the stomach when the digestive function is much impaired, the potash, before recommended, may afford relief, not only by neutralizing the acid, but likewise by forming with it a laxative salt, and thereby opening the bowels. As the potash is directed to be given before any symptoms of the disease are observable; its good effect may depend in a great measure on the appetite being diminished by it. Mr. Holditch is of opinion, that the *Resp* has not been distinguished from the garget or gargas, a disease which is often very fatal among sheep fattening on cole. This disease (garget) is also confounded with another, equally, or more fatal, called Blood-striking, Shewt of Blood, Red Water, &c.,

RES—RID

of which cole-fed sheep may die at any period of their fattening. (See *Garget*.) It appears to me that this disease, called the Resp, is precisely the same as that which is termed Meadow-sickness in cattle, and which most commonly happens when they are put into rich aftermath. See *Meadow-Sickness* and *Appetite*.

RESPIRATION. The act of breathing; which includes inspiration, or the taking in of air by the lungs; and expiration, or the act of discharging it.

RETINA. See *Eye*.

REVULSION. An old term now in disuse, signifying the drawing of humours a contrary way; thus, in diseases of the horse's head, bleeding in the tail, according to this doctrine, would be recommended.

RHEUMATISM. This disease sometimes affects both horses and cattle. In some cases it is indicated by swelling and tenderness in certain parts; in others there is no external appearance of disease, but the animal becomes lame and feverish. It is generally caused by exposure to cold and rain, particularly after having been heated by exercise. Whenever lameness, after a careful examination, cannot be accounted for, and is found to go off after exercise and return again, it is probably rheumatic. In this case, bleeding, when indicated by the state of the pulse, moderate purgings, fomentations, and stimulating embrocations will probably effect a cure. When rheumatism occurs in the foot, and the affected foot is colder than the sound one, the shoe should be taken off, and the bottom of the foot pared. After replacing the shoe, the foot should be stopped with some warm tar ointment, and the fetlock joint rubbed with some stimulating application. Washing the legs and feet with cold water, immediately after strong exercise, is liable to bring on an attack of rheumatism.

RHUBARB. This is one of the medicines that is deemed useless at the Veterinary College. It certainly cannot be considered as a purgative in regard to the horse; but may possess some useful quality as a stomachic.

RIDING. The chief requisite for becoming a good horseman is confidence; and this once obtained, a good seat, as it is commonly called, is not very difficult of

RIDING.

attainment. As it is undoubtedly the chief, though not the only point in riding, to be able to sit a horse without danger of being thrown, I shall proceed to lay down a few general rules for this purpose. It is a common custom in military equitation, to ride with very long stirrups, to sit perfectly erect, and to move but little in the saddle; that is to say, the motion of rising in the stirrups when trotting, is, as much as possible, avoided. The seat is to be placed well down on the saddle; that is, not projecting back towards the cantle, but, in riding-masters' phrase, kept "well under the rider." To effect this, the body must be thrown back, and the legs and arms kept steady. The best mode of learning to ride is to begin without any stirrups, so as not to acquire a habit of placing too much reliance upon them, for the firmness of a man's seat on horseback mainly depends upon the knees and thighs, although in some cases, as in leaping, the calf of the leg is of great service. The leg should be placed, as near as possible, so that a line dropped from the knee may touch the toe; the ball of the foot should rest in the stirrup, and the heel be inclined downwards and turned out, by which means the knee has a firmer hold of the saddle. The right hand, when not used, is, by soldiers, allowed to drop rather behind the corresponding thigh. In riding in a circle, or when cutting off the corners in a riding-house, the body must be inclined to the same side as the horse leans (that is to say, to the inside), in order to preserve an exact perpendicular. On putting a horse into a trot, both legs should be equally pressed to his body; but, for the purpose of making him canter, the heel of the rider opposite to the leg which the horse is required to strike or lead with, should be applied to his side smartly and farther back than the other heel: thus, to make a horse lead with the right leg, close both legs upon him at the same time, but press firmest and farthest back with the left, at the same time shortening the left rein, so as to incline his head to that side, and throw his hind quarters the other way; *et vice versâ*. Some horses require lifting with the hand to make them canter; but though, at this pace, it is well to raise the horse in a slight degree at every stroke, yet it

RIDING.

has a very ugly appearance to see a man jerking his horse's head previously to putting him into a canter, and resembles that elegant trick, which several old gentlemen practise, of tugging three or four times at the rein when driving, in order to accelerate the pace of their beast. Whenever a horse has acquired this habit, the best mode of breaking him of it is to shorten the reins, so as to bear his head well up, and apply the spurs two or three times sharply to him. The proper use of the hand and leg in riding is an art that is not obtained by every horseman; and although the slightest reflection will suffice to convince any man of the propriety of using both the one and the other in different manners, according to the pace or direction required, still we daily see numbers of equestrians who have not the most remote idea of this particular branch of horsemanship, but who think that the mere act of sitting on a saddle, and hauling a poor brute's head first to one side then to another, is quite sufficient for every purpose, not only of conveyance without risk, but likewise of gracefulness. The use of the hand is of the very greatest importance in riding. The general mode of holding the reins taught in military schools, is as follows: To take up a single snaffle bridle, place the little finger between the two reins, then draw them through the palm of the hand, turn the ends over the forefinger, and close the thumb upon it, at the same time shutting the hand. If a double bridle, after taking up the snaffle as before described, and before shutting the hand, draw the curb rein on one side through the palm, until of the same length as the snaffle, and then take up the loose part with the right hand, passing it between the fourth and ring-finger, and the first finger and thumb; or if both bridles be held in one hand, the third finger may be passed between the snaffle rein and the fourth between the curb, after which both are to be brought over the forefinger, and held fast by the thumb. For my own part, I always prefer holding a single snaffle with the third finger instead of the fourth, especially if a horse pull hard, as then both the right and left rein are more firmly grasped, the first being between the second and third fingers, the last between the third and fourth.

RIDING.

The snaffle is by far the pleasantest species of bridle to ride with, if the horse's mouth be good ; and, if he require a curb, it is always better to use a double bridle (that is, a snaffle and curb) than a single curb, which, in pulling a horse up suddenly while at full speed, is apt to throw him down, by reining his nose in towards his chest, and thereby confining the motion of his fore quarters. The use of a curb is to put a horse more upon his haunches, which is sometimes desirable (see *Forging*), and to make him carry his head high. It should be employed with moderation, as it is extremely severe. (See *Bit*.) When reined in by the curb, and lightly spurred at the same time, a horse is made to *fight*, as it were, with his fore legs, and show himself off, for which reason this practice is much in vogue with young gentlemen, who imagine that such a carriage adds to their horse's good points, if he have any. To be a good horseman, it is necessary to have a light hand, and never to pull a horse's mouth about, but rather to play with it, especially if he be fretful, impatient of restraint, and given to snatch at the bridle ; in doing which, the hand should either be advanced, so as to give him full liberty with his head, or the reins so lightly held as to admit of their being easily pulled through the hand ; they may be immediately drawn back again without difficulty. In riding on the road, the stirrups are generally shortened so as to permit a slight rise from the saddle while the horse is trotting ; a motion both pleasanter to the rider and easier to the animal than the jog-jog pace at which soldiers are taught to ride. In hunting and racing, the stirrups are still more shortened than when on the road ; by which means the horseman is enabled to stand in his stirrups, and avoid touching the saddle ; a position less wearisome to a horse than the former, but only practicable at a gallop. The expression of "*standing in the stirrups*," is very common, although, were this to be actually practised, I query whether it would be so easy to a horse as when the rider sits firm on the saddle ; but the fact is, that, instead of bearing the whole weight on the stirrups, the body should be mainly supported by gripping the saddle firmly with the knee, both in

RIN—ROA

this position and every other. In leaping, the knee and thigh are chiefly to be depended on ; some people, indeed, quit their stirrups previous to taking a high leap, for fear of the foot being entangled in case the horse should fall. The body should be slightly inclined forward when the horse rises to a leap, and thrown backwards as he falls ; the thigh and knee should keep a firm hold of the saddle, and the leg, thrown rather backwards, should be tightly pressed against the horse's belly, taking care, however, not to hold on by the spurs. Many horses are thrown down in leaping, by the awkwardness and indecision of their riders, who first run them at a fence, and, when near it, and too late to retract, wish they had not done so, endeavour to pull up, and thus check their horse while in the act of making his spring. When coming to a leap, therefore, make up your mind whether you will ride at it or not ; and if you decide in favour of the former, go at it resolutely, and let no after-thought balk your determination. In riding, whether on the road or elsewhere, keep your arms and legs steady, for nothing looks worse than to see a man with outstretched arms, as though he were going to leap from his saddle, and working his legs too and fro, so as to merit the accusation of *going faster than his horse*. In racing, a horse should be kept well in hand, and, when spurred, the heels should be drawn back to his flanks with as little motion as possible, and not, as is frequently the case, kicked into him, when at the last rush, in such a manner as to expel the little wind he has left in him. The limits of this work prevent my going into every particular that the subject demands.

RINGBONE. A bony excrescence on the lower part of the pastern, generally, but not always, causing lameness. The only effectual remedy is Firing ; and the earlier this is done the better. See vol. iii. of *White's Farriery*.

ROARING. A disease which takes its name from the wheezing noise the horse makes in breathing, when put into quick motion. It is supposed by most veterinary writers to be caused by an effusion of coagulable lymph

ROS—ROT

in the windpipe ; and is considered incurable. There are several degrees of this disease, which dealers distinguish by appropriate names ; such as a wheezer, a whistler, a high blower, a trumpeter, &c. I believe the disease is sometimes asthmatic. In some instances, but seldom perhaps, it may arise from an effusion of coagulable lymph in the windpipe. It appears to me, that the obstruction to breathing which causes roaring is seated in the larynx. Some time ago, I examined a very bad roarer, that was destroyed on account of the disease, as it rendered him nearly useless ; and found an ulcer within the larynx, on one side only ; all other parts healthy : since that, I have met with a similar case. The usual mode of detecting this disorder, is to strike, or pretend to strike, the horse in the flank, at the same time checking him with the bridle, when, if a roarer, he will probably grunt. The best mode, however, is to gallop a horse up hill.

ROSEMARY. The essential oil of this shrub is a useful ingredient in stimulating ointments, liniments, and embrocations. It may be mixed with camphor and spirit of wine ; and these, with the addition of soap, form the celebrated opodeldoc. Internally, it is a good carminative, cordial, and stomachic. The dose of the essential oil, which is the best form it can be used in, is two or three drams.

ROT. A term applied by writers on cattle medicine to a disease in sheep, which appears to resemble pulmonary consumption, complicated with dropsy ; as on dissection the lungs are found knotted with tubercles and abscesses, and there is generally water in the chest or belly. The disease often affects the liver also, and sometimes other internal parts, as the mesenteric glands, &c. The rot has therefore been distinguished by different names, such as the pulmonic, hepatic, and general rot. Bakewell, Mr. Lawrence says, was strongly of opinion, that flooded lands, and their premature unsubstantial herbage, ever occasioned the rot, which was not induced by rains, the water of which did not flow, or by springs. It seems he could rot his sheep at will by flooding his land, which he was in the habit of doing

ROWELS.

with such of his improved stock as he wished to keep out of other breeders' hands. Land flooded after the middle of May, of whatever kind the soil might be, would, in his opinion, infallibly rot the sheep. Mr. Lawrence, however, very properly rather attributes the disease to the colds they catch in these wet situations, and which are afterwards neglected. As the disease when established is incurable, prevention is a matter of great importance; and Mr. Lawrence observes, should necessity oblige the farmer to feed his sheep on swampy grounds, wet fallows, or lately flooded lands, two precautions may ensure the safety of his flock; namely, not to suffer the sheep to rest, far less to remain on such dangerous layers; but to pick as much grass as may be deemed expedient, and then be immediately driven either to high and dry grounds, or folds where they may rest, particularly by night, and receive a sufficiency of dry food, either hay or straw. An ingenious treatise on this subject has been published by Dr. Harrison, who seems to be of Bakewell's opinion as to the origin of the disease; he does not, indeed, attribute it to eating rank pasturage, but rather to some noxious invisible vapours, which arise from land that has been flooded: he agrees, however, with Mr. Lawrence as to the mode of prevention. It is an extraordinary circumstance, that in the beginning of this disease, sheep are more disposed to feed than usual, and increase in fatness. Purging is a general concomitant of this disorder.

A disease, called Foot-Rot, is incidental to sheep, and is similar to the Loo, or Foul in the foot of cattle, and to Grease in horses. The only method of cure is to pare away all the horn under which the disease has formed, and to apply caustics, such as a solution of blue vitriol dissolved in vinegar, or a solution of red precipitate in nitrous acid, diluted with an equal quantity, or more, of water. Sheep affected with foot-rot, should be kept in a perfectly dry situation, and be fed entirely on grass, as I have known the disease kept up for a long time by such food as grains, and malt dust. See vol. iv. of *Farriery*, or *Cattle Medicine*.

ROWELS. These may be considered as artificial ab-

RUE—RUP

scesses or drains. The usual method of inserting a rowel is to make an incision in the skin about an inch in length, with a pair of strong short-bladed scissors. The cellular membrane under the skin is torn with the finger all around the incision to the extent of about an inch, so as to admit a circular piece of leather with a hole in the centre, wrapped in tow, and smeared with turpentine or digestive ointment. The parts in which rowels are usually inserted are the chest, belly, thighs, and under the jaws.

RUE. This plant has been highly extolled by writers on farriery. It has a strong unpleasant smell, and a bitter, hot, penetrating taste. The leaves are so acrid, that by much handling they have been known to irritate and inflame the skin. The imaginary quality of rue, in expelling and resisting contagion, is now laid aside. It is, doubtless, a powerful stimulant, and is considered, like other medicines of the fetid kind, as possessing attenuating, deobstruent, and antispasmodic powers. Gibson says, that it is of very general use; and if the bruised leaves are thrust into the horse's ears, it will remove a fit of the staggers!

RUMINATION. Chewing the cud.

RUNNING-THRUSH. See *Thrush*.

RUPTURE. *Burstenness, Film-broken.* A swelling caused by the protrusion of some part of the bowels out of the cavity of the abdomen, into a kind of sac, formed by that portion of the peritoneum which is pushed before them. In the horse ruptures generally happen in some part of the belly, and may be distinguished from other swellings by disappearing when pressed upon by the fingers, by which the gut is put back into its natural cavity, and returning as soon as the pressure is withdrawn. A rupture sometimes happens in the scrotum, or testicle bag. I have known several cases of rupture, both of the belly and scrotum, where the horse did his work as usual, and suffered no inconvenience from it. The following case, in which an operation was successful, I have received from a correspondent of considerable experience. "A colt was gored by a bull; the rim (muscles of the belly) was broken at one place,

SAC—SAL

the skin at another ; the intestine ran between the rim and the skin, but did not come through the skin. He was thrown on his back, the intestine was returned, and the skin sewed up. A wide bandage was then applied, and in a short time he became perfectly sound, and sold for a good price." In the human body, the protruded gut is sometimes strangulated ; that is, it is so compressed by the ring or aperture through which it has passed, as to become inflamed ; attended of course with violent colic. It is often found necessary in such cases, to open the skin carefully, and by a blunt-pointed knife, guided by the finger, to enlarge the opening or ring, so that the bowel may be returned. Gibson relates a case of strangulated rupture in a horse, which proved fatal. The operation of castrating horses is supposed, in many instances, to prevent scrotal hernia.

S.

SACRUM. That part of the back bone from which the tail proceeds.

SADDLE-GALLED. See *Back, Sore*.

SAFFRON. A medicine formerly much used by farriers ; but now known to have very little, if any, medicinal power.

SAGAPENUM. A gum resin, sometimes prescribed in coughs, and antispasmodic balls.

SAGE. The leaves of sage are recommended by Gibson, as having the effect of sweetening the blood.

SAL AMMONIAC, *Crude Sal Ammoniac*, or *Muriate of Ammonia*. Gibson prescribes it in epidemic catarrh, or influenza, in the dose of one ounce, with nitre, soap, and camphor. It is more commonly, however, used as an external application in strains and bruises, dissolved in vinegar and water.

SAL PRUNELLA. A compound of nitre and sulphate of potash.

SALIVA, *Spittle*. The juice secreted by the sublingual and other glands, for the purpose of moistening the food : perhaps it assists also in its digestion.

SALIVATION. A profuse and continued flow of saliva.

SAL—SAN

SALLENDERS. This is the same disease as mallenders, only occurring in a different situation; that is, in the bend of the hock. See *Mallenders*.

SALT. Common or culinary salt may be given both to horses and cattle as a laxative. The dose, from four ounces to half a pound, dissolved in two quarts of gruel. Castor oil is in some cases a useful addition; that is, when the bowels are supposed to be in a tender or irritable state.

SALT OF TARTAR and WORMWOOD. See *Potash*.

SALT-PETRE. See *Nitre*.

SAND-CRACK. A perpendicular fissure or crack on the side or quarter of the hoof; generally on the inside, on account of its being the weakest. When a sand crack takes place in the hind foot, it is commonly in the front part of the hoof. Sand cracks seem to arise from a tendency in the horny matter to contract at a time when it is rather brittle. The crack sometimes does not extend to the sensible parts; at others it is deeper, and causes considerable lameness. The shoe being removed, the extent of the crack is to be carefully examined: if it be superficial, it will be sufficient to fill the crack with the subjoined composition; and by keeping the foot cool and moist, remove the contractile disposition by which the crack has been caused: but when the crack has extended to the sensible parts, there will generally be seen some fungous flesh, which is caused by the pressure of the edges of the cracked horn upon the laminated or elastic membranes. (See *Foot*.) Such horn is to be carefully removed with a small drawing knife; some caustic is then to be applied to the fungus, the reproduction of which must be prevented by binding on it, firmly, a pledget or roll of lint or tow dipped in tar, or tar ointment, which must be continued until the fungus is destroyed. The whole foot is to be kept moist with a bran poultice for a few days, or until it has become cool, and the lameness is removed. A shoe is then to be applied, so as not to bear on the diseased quarter: that recommended for corns will best answer the purpose. When this has been done, the pledget of tow should be removed, the crack filled with the com-

SAN—SCA

position, and the horse turned to grass in some soft meadow ground. Before the shoe is applied, the quarter in which the sand crack is should be made lower than the other: and it is necessary to examine the foot once in three or four weeks, as the horn will in this time have grown down, and be again receiving pressure from the shoe. By this treatment of the disease, the crack will be found to recede or be more distant from the coronet as the hoof grows, till at length it totally disappears.

COMPOSITION FOR SAND CRACK.

Bees' wax, four ounces.

Yellow resin, two ounces.

Common turpentine, one ounce.

Tallow or suet, half an ounce.

To be melted together. See vol. i. of *White's Farriery*.

SANIES. A bloody or greenish matter, which is sometimes discharged from foul ulcers.

SARSAPARILLA ROOT. This has not been hitherto employed in veterinary medicine, nor does it appear to possess sufficient activity ever to obtain a place in our *Materia Medica*.

SASSAFRAS. The essential oil of sassafras wood possesses a stimulant and carminative power: the dose, about one dram.

SATURNINE LOTION. This is made by adding three pints of water to two ounces of sugar of lead and one pint of vinegar; and is a useful application for diminishing external inflammation.

SAVINE. The leaves of savine are of a bitter acrid taste, and have been considered a good remedy for worms; their efficacy in this respect, however, is very doubtful. The juice has been recommended as a cleanser of foul ulcers; and the dried leaves in powder have been used for the same purpose. Upon the whole, savine does not appear to merit much notice as a veterinary medicine.

SCAB. This disease, which is similar to mange in horses, is incident to sheep; and may be cured by rubbing upon the diseased parts four ounces of finely powdered sulphur vivum, mixed with about a pint of train

SCA—SCO

oil and four ounces of oil of turpentine. This application must be made to reach the bottom of the sores, after having first scraped off the scabs with a blunt knife. Some people advise a mercurial preparation for this disorder; but I am of opinion that the system is liable to be affected by the application of this mineral, as I have seen several sheep die of the scab, after having been smeared with mercurial ointment.

SCALD. See *Burn*.

SCALDING MIXTURE. Under the head *Poll Evil*, this mixture has been spoken of: it may not be amiss, however, to give Gibson's composition, or scalding mixture. Take,

Corrosive sublimate,	}	of each two drams.
Verdigris,		
Blue vitriol,		

Green copperas, half an ounce.

Honey or *Ægyptiacum*, two ounces.

Oil of turpentine,	}	of each eight ounces.
Train oil,		

Rectified spirit of wine, four ounces.

To be applied scalding hot, and confined in the part by stitches.

SCAMMONY. A powerful purgative in the human body; but in the horse it does not appear to be more active than aloës.

SCAPULA. The shoulder blade.

SCARF SKIN. See *Cuticle*.

SCARIFICATION. An incision of the skin with a large lancet or an instrument made for the purpose. In the horse, dropsical swellings of the belly or sheath are sometimes scarified with good effect.

SCIATICA. A rheumatic affection of the hip joint. This complaint is often imaginary, and almost always conjectural; that is, I believe its existence is not demonstrated by any particular symptom. See *Rheumatism*.

SCIRRHUS. An indolent hard tumour.

SCLEROTIC-COAT. See *Eye*.

SCOURING. A scouring or purging is a common disease among all our domestic animals; and in some, it

SCOURING.

is dangerous and very difficult to cure. Under the article *Diarrhœa*, I have noticed the disease as it affects horses; but in cattle, this complaint is sometimes very serious, and farmers often sustain a considerable loss by it. When the purging has continued long, it produces general weakness and loss of flesh. The animal becomes hide-bound, and has a rough staring coat. The dung is thin and slimy; and in bad cases, air bubbles arise on its surface. The disease appears to arise (especially in milch cows) from the animal being overheated in driving, and particularly by being suddenly cooled when in this state, and by want of sufficient nourishment. Taking the animal in is the first step towards a cure. The diet should be nutritive, consisting of oatmeal or wheat-flour gruel, good hay, oats, &c. As there appears to be an acrid kind of bile formed, which probably is the principal cause of the disease, and depends on a morbid action of the liver, it will be proper to give, for two or three mornings successively, a dose of some mild mercurial, with a little rhubarb and castor oil. During this time, wheat-flour gruel should be given several times a day. The acrid bile having been got rid of by these means, a few doses of astringent medicine will probably put a stop to the disorder. The following is a good cordial astringent drench:

Powdered catechu, two drams.
Fresh ditto allspice, two drams.
Ditto caraways, half an ounce.
Good beer, one pint.

On examining cows that have died of this disease, I have invariably found great disorganization of the folds or plaits of the fourth stomach, and a general tendency to dropsy. It is a disorder that is extremely difficult of cure: but should the means already recommended succeed, great care should be taken after the scouring has ceased, in bringing the animal to her former habits. This should be done very gradually; and particular attention should be paid to keeping her in a dry situation, and well sheltered from cold or rain. As diarrhœa is very commonly induced by suddenly checked perspiration, it will be proper to endeavour to restore the

SCR—SHO

secretion of the skin: and perhaps as effectual a mode of effecting this as can be adopted, is to curry and brush the animal, regularly, once or twice every day. See vol. iv. of *White's Farriery or Cattle Medicine*.

SCRATCHES. Troublesome ulcerations about the heels, in consequence of ill treatment, filth, and negligence. See *Grease*, and *Cracks*, of which this is the worst stage.

SCROTUM. The bag or covering of the testicles.

SECRETION. The word secretion is used to express that function, by which a gland separates from the blood a particular substance; thus the liver secretes bile, the kidneys urine, the salivary glands saliva.

SEDATIVES. Medicines that diminish the animal energy, without destroying life.

SEMINAL WEAKNESS. An involuntary discharge of semen is implied by this term; but in farriery it often means a mucous discharge from the urethra. Throwing cold water on the part is, perhaps, the best remedy. Gibson recommends one ounce of Venice turpentine, mixed with the yolk of an egg.

SEPTIC. Any thing which produces or promotes putrefaction.

SERUM. The watery part of the blood.

SESAMOÏD BONES. Two small bones on the back part of the fetlock joint.

SETON. A piece of cord or tape passed under the skin, by means of an instrument called a seton needle. Setons are sometimes made in sinuses, such as fistula or poll evil, in order to make a depending opening, so that the matter may run off freely.

SHELL-TOOTH. The corner tooth, or last which the horse changes, is so named from its supposed resemblance to a shell. Horses are said also to be shell-toothed, when they preserve a mark in the corner teeth beyond the usual period.

SHOEING. In shoeing a strong well-formed foot there is no great difficulty; but in feet of a different description, considerable care and skill are often required both in the preparation of the foot, and in the application of the shoe. The bottom of a well-formed foot is

SHOEING.

in a small degree hollow ; that is, the crust is rather higher than the sole, the frog large and solid, the bars open and distinct. The only preparation necessary in such a foot is, to make the bottom of the crust level by means of a rasp, to scrape off any loose horn there may be in the sole, and to leave the frog and bars untouched. The toe of the shoe should be about an inch wide, and half an inch thick ; the heel a little narrower and thinner. That surface of the shoe which bears on the ground, should be perfectly flat ; that next the foot, particularly towards the toe, should be a little hollowed ; for even in good feet, the sole towards the toe is often as high as the crust, and consequently would be pressed upon by the shoe, were its surface made flat. The toe of the shoe being the part that wears most, should be formed of steel. The nails should be placed as near the toe as is consistent with the security of the shoe, that there may be as little restraint as possible upon the motion of the heels, and quarters of the hoof. When the bottom of a horse's foot is flat or convex, instead of being rather hollow, it is at the same time much thinner, and less capable of bearing pressure. The shoe for such a foot should be wider than that already recommended, and more concave on its inner surface than otherwise. The crust of flat or convex feet is usually weak ; therefore, great care is required in nailing on the shoe ; and this will appear the more necessary, when it is considered how much pain the animal must suffer, and what severe lameness may ensue, should he happen to loose a shoe during a journey. Horses that have long and oblique pasterns, with weak low heels, require a shoe rather thicker at the heel than that just described ; and when the pasterns are short and rather upright, and the crust of the heels deep and strong, a thin-heeled shoe is proper. Such heels generally require to be lowered with the rasp or drawing knife before the shoe is put on. Mr. Coleman observes, there are two circumstances necessary to be attended to in shoeing, viz. to cut the hoof and apply the shoe. Before the hoof is protected by iron, some parts require to be removed and others preserved. This is

SHOEING.

even of more importance than the form of the shoe. But many have attended chiefly to the form of the shoe, and not to its application, or to the hoof; and this error has done more mischief, and made more enemies to the Veterinary College, than all the prejudices and calumnies of grooms and farriers. The first thing to be attended to is to take away, with the butteris, a portion of the sole between the whole length of the bars and crust with a drawing knife; for the heels of the sole cannot receive pressure without corns. To avoid this, the soles should be made concave, so as not to be in contact with the shoe. If there be any one part of shoeing more important than the rest, it is this removal of the horn between the bars and crust. When this is done, the horse will always be free from corns, whatever be the form of the shoe. Beside this, the heels of the shoe should be made to rest on the junction of the bar with the crust. If a shoe does not leave ample space for a picker to be passed under it, either the shoe or the sole should be made more concave. When the sole appears in flakes and thick in substance, it will be better to make the sole sufficiently hollow to admit of the application of a flat shoe, as it will rest only in that case on the crust. But when the sole will not allow of being thus pared, the shoe must then be made sufficiently concave on the surface next the foot, that the picker may be passed easily under it. But even in flat or convex feet, the horn is generally sufficiently strong towards the heels to allow of being pared moderately and made concave. In shoeing the hind foot it will be sufficient to pare off the horn from the sole, and make an even surface for the shoe, which may always be flat on both surfaces; as no inconvenience would arise if it happen to bear a little on the sole. It is usual to turn up one or both heels of the hind shoe to prevent slipping. This should not be done unless the horse is worked in situations which render it necessary; and then the outer heel only should be turned up, and the inner heel made thicker than the toe and quarter, so that both heels may be equal. It is needless to describe here the various kinds of shoes,

SIL—SOA

that have at different times and by different authors been recommended. The feet of horses are often variously deformed, either by bad management or accidentally, and no one form of shoeing or mode of paring the foot can be applied indiscriminately. The reader who wishes for a more particular account of this subject is referred to Mr. Coleman's splendid work on the Structure, Economy, and Diseases of the Horse's Foot, and to the author's first and third volumes of *Veterinary Medicine*.

SILVER, NITRATE OF. See *Lunar Caustic*.

SINEW. See *Tendon*.

SINEW-SPRUNG. A wound in the back part of the fore leg by the hind foot. This does not require any peculiar treatment. (See *Wounds*.) The term Sinew-sprung is also applied sometimes to strains in the back sinew, which see.

SITFAST. A horny kind of scab, which forms on the skin in consequence of a saddle-gall. Let it be rubbed with camphorated mercurial ointment, until it is loosened in some degree; it is then to be torn off with pincers, or gradually dissected off with a knife. The sore is to be dressed two or three times with a solution of blue vitriol; it will then gradually heal.

SKIN. See *Cutis*.

SLEEPING EVIL. See *Lethargy*.

SLEEPING. See *Abortion*.

SOAP. A substance much used in veterinary medicine. Given internally its most conspicuous effect is that of a diuretic; many other virtues have been attributed to it, probably without sufficient foundation. I believe, that good English soap is just as useful a medicine as that called Castile, Venice, or by any other foreign name. It facilitates the operation of aloës or purgative compositions, and is almost an indispensable ingredient in diuretic balls; not only on account of its efficacy as a diuretic, but from its giving a convenient and durable consistence to the mass. The usual dose of soap is about half an ounce; but it is often given in much larger doses. (See *Dropsy*.) In a letter from an ex-

SOC—SOU

perienced correspondent, I am informed that he once gave,

“ Soft soap, eight ounces.

Elecampane, one ounce.

Flowers of sulphur, two ounces.

Flour of mustard, two spoonfuls ; in milk—

for a dropsy in a colt, but without any good effect ; it is remarkable, however, that it did not make him sick.” Soap is a useful ingredient in embrocations.

SOCOTRINE ALOES. See *Aloës*.

SOILING. Giving horses green food in the stable or under cover. This is often a useful substitute for turning horses to grass, particularly when green food of good quality can be procured, and when they can have the advantage of a large airy place, where they can move themselves freely without being tied up. Horses that have been fired or blistered for strains, &c., when turned to grass, often injure themselves by galloping and leaping over ditches and hedges ; and the good effect that might otherwise have resulted from the operation is lost. Soiling, therefore, is on many occasions a better kind of rest or relaxation for a horse, than a run at grass. Lucerne, vetches, and clover are the best food that can be given them. In an economical point of view, soiling both for horses and cattle is probably worth attention.

SOLE. See *Foot*.

SOUNDNESS. This term, as it applies to horses that are purchased or sold, has rather an indefinite meaning ; and the “ glorious uncertainty of the law ” is perhaps on no occasion better exemplified, than when disputes upon this subject are decided in a court of law. An inexperienced purchaser should always procure the assistance of a professional person ; and if such cannot be had, he should have a written warranty with the horse upon a proper stamp, in the following form :

Received of Mr. —, the sum of —, for a —, quiet to ride or drive, warranted perfectly sound, free from vice or restiveness of every kind ; not a crib-biter, and between — and — years old.

Some further remarks on this subject may be seen in vol. iii. of my *Farriery*, p. 338.

SPA

SPASM. An involuntary and continued contraction of muscles: thus locked-jaw depends upon a spasmodic contraction of its muscles.

SPAVIN. A disease of the horse's hock, which generally causes lameness. Spavins are of two kinds, the bone, and the bog or blood spavin. The former consists of a bony enlargement of the inside of the hock joint, towards the lower part; the latter of a soft but elastic tumour, a little higher and more on the inside, or towards the bend of the joint. The most effectual remedy for bone spavin is firing, and, if it be done at an early period of the disease, it often cures it. In obstinate cases, I have known the bony swelling punctured in several places, and some blistering ointment mixed with a small proportion of corrosive sublimate rubbed in. This produces a high degree of inflammation, and is sure to leave a permanent blemish; but, in some instances, has effected a cure. Another mode of treating bone spavin is to make an incision in the skin with a knife, or bore a small opening in the bony swelling with a hot iron, and introduce some sublimate or arsenic, and confine it with a plaster. This generally occasions more violent inflammation than the former, and often excites symptomatic fever: in one instance, however, though for a time the horse's life was in danger by the symptomatic fever that was excited, the result was a considerable diminution of the lameness, so that the horse became in some degree useful again. These, however, are remedies I should be loth to have recourse to; but firing, if seasonably employed, I have in many instances found effectual. Bog or blood spavin does not often cause lameness, except when the horse's work is severe, as in hunting. This complaint, I believe, is seldom removed; and though it may, when large, render a horse unfit for severe exertion, it is rarely an impediment to moderate work. If any thing be done, repeated blistering is perhaps most likely to be beneficial. Horses most disposed to spavin are those that are cat-hammed, or have their hocks inclining inward; and this tendency is promoted by making the outer heel of the shoe higher than the inner heel, a practice that is too common.

SPE—SPI

Another cause of spavin is working a horse at too early an age, particularly when he is employed in work that requires considerable exertion of the hock joints, such as leaping, or drawing heavy burthens. See vol. iii. of *White's Farriery*.

SPEEDY CUT. Cutting on the inside and lower part of the knee joint. This kind of cutting takes place in going at a full trot or gallop. See *Cutting*.

SPERMACETI. An unctuous substance taken from the head of the whale. It is not used internally for horses: melted with oil and wax it forms an emollient ointment, named *Spermaceti Ointment*.

SPERMATIC CORD. The vessels, &c. by which the testicles are suspended; consisting of the spermatic artery and vein, the *vas deferens* or seed duct, cremaster muscle, and cellular membrane.

SPHINCTER. A name given to muscles, whose fibres are arranged in a circular direction, and whose office is to shut up the parts to which they are attached. Such are the sphincter or neck of the bladder, and the muscle which closes the fundament.

SPINE. The spine of the neck and back is composed of many small bones named *Vertebræ*. Seven belong to the neck, eighteen to the back, six to the loins, five to the sacrum, and in the tail there are about thirteen. Each vertebra is composed of a porous or spongy substance, termed its *Body*; and parts projecting from it, named *Processes*. The processes of the *vertebræ* unite, to form a canal through which the spinal marrow passes; and by some of these processes the *vertebræ* are articulated or joined to each other, as well as by their bodies; by which means the surface of attachment is much increased, and the strength of the spinal column is rendered very great. Though but little motion is allowed between any two *vertebræ*, yet the flexibility of the whole spine is considerable; by which wise contrivance the spinal marrow is not liable to compression. In old horses, the ligaments connecting the *vertebræ* and the intervening cartilages become bony, so that great part of the back sometimes becomes inflexible. The sacrum, which, in the young colt, is composed of five bones, be-

SPI—SQU

fore he arrives at maturity is, by a similar process, formed into one. The spine of the horse's back is not unfrequently injured, and sometimes broken. When fractured, the case is absolutely incurable; and in slighter injuries, though the horse's health may not suffer, he seldom recovers so as to be serviceable.

SPIRIT. A name given to any fine volatile fluid, which evaporates in a low degree of heat, such as ether, spirit of wine, &c. The name, however, is now generally confined to alcohol, which is commonly named Spirit of Wine. It is much used in medicine, in making tinctures, &c. and is an ingredient in many of the preparations kept for external use; such as opodeldoc, Friar's balsam, &c. In its pure state, it is distinguished by the name of Rectified Spirit; and when diluted with an equal quantity of water, it is called Proof Spirit.

SPLEEN, or MILT. One of the viscera of the abdomen. Its use is not known.

SPLENTS. These are bony excrescences, which grow on the inside of the shank bone. They seldom occasion lameness, unless situated so as to interrupt the motion of the knee joint, or interfere with the back sinew or suspensory ligament of the leg. Should a splent occasion lameness, which is sometimes the case, merely from the ossific inflammation, let it be bathed with camphorated spirit, or spirit and vinegar; or let some soft linen be moistened with these and bound on it, keeping it constantly moist. This, in a few days, will generally remove the lameness, but the splent will remain. Whenever it is thought necessary to attempt the removal of a splent, repeated blistering is, I believe, preferable to the more severe measures recommended in books of farriery. See vol. i. of *White's Farriery*, p. 232.

SPRAIN. See *Strain*.

SQUILL, or SEA ONION. Squill carefully dried and powdered is a useful medicine in chronic cough; it is generally joined with gum ammoniacum and other expectorants. The dose of dried squill is from one dram to two; of the fresh squill, half an ounce to one ounce. Squill is sometimes used in the form of a tincture, both spirituous and acetous. The former is made by putting

STABLE MANAGEMENT.

four ounces of powdered squill into two pints of proof spirit, shaking the mixture frequently. In about eight days the tincture may be strained for use. The acetous tincture is made in the following manner :

Take, of

Fresh dried squill, half a pound.

Vinegar, three pints.

Proof spirit, four ounces.

Macerate the squills with the vinegar in a glass vessel, with a gentle heat, for twenty-four hours, frequently shaking or stirring it; then press off the liquid part, and set it aside till the foul parts subside. Pour off the clear liquor, and add the spirit. The vinegar of squill, made into a syrup with honey, is named Oxymel of Squill.

STABLE MANAGEMENT. The preservation of health is certainly a matter of great importance; and as the construction and management of a stable are materially connected with the prevention of disease, some concise observations on the subject may not be deemed superfluous. Stables should be built on a dry soil that is somewhat elevated; or at least, they must not be built in a hollow, or in the neighbourhood of boggy or marshy land. Stables should be large in proportion to the number of horses they are to contain; perhaps no stable should be made to hold more than five or six, as many inconveniences arise from keeping too many horses in the same apartment. Not only is the air thereby much more vitiated, but the rest and sleep, so necessary to repair the fatigues of the day, are thus prevented or disturbed. Some horses will not sleep or even lie down, unless perfectly at their ease; and hence, in large stables, that are made to contain a dozen or more horses, as is often the case in livery stables, and such as are attached to large inns, the frequent entrance of grooms, ostlers, and other persons with lights into the stable, must be a great disturbance to horses that are fatigued and in want of rest. Double-headed stables are bad, not only on account of the number of horses that are kept in such stables, but from the accidents that are likely to happen from their kicking each other. The roof of a

STABLE MANAGEMENT.

stable should be lofty; when it is low, scarcely any mode of ventilation can be effectual without exposing the horses improperly to a draught or current of air. However convenient it may appear, it is a bad plan to have the hay-loft over the stable: the most wholesome stables are those where nothing intervenes between the roof of the building and the floor; and I have had occasion to observe, that roofs made of unplastered tile form the best mode of ventilation. The walls of the stable should be of stone or brick, which are not so penetrable by heat as wood; consequently are warmer in winter and cooler in summer. The width of a stall should not be less than six feet; the floor should slope from the manger backward, in the proportion of one inch to a yard. The partitions of the stalls should be sufficiently high and deep to prevent the horses from injuring each other and themselves. I have seen two cases, where a horse in kicking got his hind leg over the post at the end of the stall: one of them died from the wound he received, the other recovered with difficulty. The floor is usually made of pebbles or hard brick; if the former are used, they should be small and well rammed, so that the surface may have no inequalities. With respect to the rack and manger, the plan represented in plate 20, vol. i. of my *Treatise on Veterinary Medicine*, has been found to possess great advantages. The admission of sufficient light into a stable is a point that ought to be attended to. It has been supposed that horses feed best in the dark, but this is by no means true. Window-shutters are useful, as they may serve occasionally to darken the stable during the day, that a horse may be induced to lie down and get more rest than he otherwise would. Making the walls of a stone or dove-colour is preferable to having them white-washed. The windows should be sashed, and made to draw down from the top, as well as to be thrown up from below. In the present improved state of stable management, it is needless perhaps to observe, that nothing which produces an offensive smell (for horses are very delicate in this respect) should be kept in or near a stable, and that the stable doors and windows should be thrown open while the horses are out

STA

at exercise. The litter, during the day, should be removed; in good weather it may be placed outside the door, so that the foul vapours and moisture may escape. Horses that work hard, such as post and coach-horses, should always be well littered. To finish the subject of stable economy (for we say nothing here of feeding), some remarks must be made on currying or dressing horses. Friction on the horse's skin is necessary; it not only keeps him clean, but serves also to promote the insensible perspiration, and by the exercise it occasions, the free circulation of the blood is at the same time promoted: in the moulting seasons, however, particularly in that which happens in spring, the currycomb should be laid aside. This important subject has been more minutely explained in the four first chapters of the first volume of my *Veterinary Medicine*.

STAG EVIL. See *Locked-Jaw*.

STAGGERS. This disease has been usually divided into two kinds; viz., the sleepy and the mad staggers. The latter disease is noticed under the head *Brain, Inflamed*, the former under that of *Lethargy*. In vol. iii. of my *Veterinary Medicine*, a disease is described, the symptoms of which nearly resemble those of stomach-staggers, which raged with great violence in Glamorganshire. "In one year," my correspondent at Swansea informed me, "a neighbour of ours lost more than a hundred horses by it, and the next year we lost about thirty. The symptoms you mention as distinguishing stomach-staggers are exactly such as occur here; and the distinction you point out between this and brain-staggers is correct; but, beside the symptoms you mention, the animal is subjected to a general convulsive affection, frequently attempts to stale, discharging a little urine at a time, by shoots, as if convulsed; and most commonly the horse's jaw is locked some time previous to his death." The symptoms of stomach or symptomatic staggers are, the horse hangs down his head or rests it in the manger: appears drowsy, refuses his food; the tongue and mouth are tinged of a yellowish colour; the membrane under the eyelid is generally more deeply tinged, approaching to a dusky orange colour. There is a slight convulsive

STAGGERS.

motion or twitching of the muscles of the chest ; the fore legs appear suddenly to give way at times, as if the horse would fall, but this seldom happens ; and he rarely lies down, unless the disease is going off, or death is approaching. The pulse is never affected in the early stage of this complaint, but when the disease continues four or five days, inflammation of the bowels and lungs sometimes takes place. The disease is always attended with costiveness, and the dung that is drawn off by raking is generally hard and slimy. The urine is generally in small quantity ; and in the latter stage of the disorder I have known a retention of urine take place, probably from a paralytic state of the bladder. I have sometimes observed, that on opening the stable door, the horse appears to be roused for a time, pricks up his ears, and neighs. In the latter stage of the disease the jaw sometimes becomes locked. It has been clearly proved, by opening horses that have died of this complaint, that the symptoms arise from the stomach being crammed or distended with dry undigested food ; but it has not been clearly ascertained what it is that causes this loss of power in the stomach, in consequence of which it becomes incapable of performing its functions. From considering the variety of circumstances and situations in which the disease takes place, it appears probable that different causes may produce the same disorder, but in various degrees. The staggers which proved so fatal in Glamorganshire, I am inclined to believe, were an epidemic, or rather an endemic and contagious disorder. The gentleman of Swansea, who favoured me with his observations on this disorder, says, " I strongly suspect it arises from some poisonous plants in our pastures, which flourish only to a poisonous extent at some particular times, and which have not hitherto been detected. I have mentioned our horses having been attacked the year following our neighbour's great loss, and when they were free from it. Most of our horses were purposely kept in the stable ; and I have some idea that they were fed upon hay of the same year that our neighbour's horses were fed upon the preceding year." In another part of the letter, he says, " Our neighbours firmly believe it is

STAGGERS.

contagious: they took every precaution to prevent contagion, and the disease left them. I was incredulous, and at this time we had not suffered; a horse from their neighbourhood came to graze in some fields through which our horses passed; he died of this disorder, and was left unburied: from this time the disorder began with us." In the cases of staggers which I have seen, and they are numerous, the disease has never appeared to originate in contagion or infection. When it has occurred at grass, it is generally about autumn, and frequently in meadows adjoining rivers, and other situations where the grass at that time is rank, and possesses but little nutriment. The humid and cold atmosphere in such places may perhaps contribute, in no slight degree, to the production of the disorder. The cases of staggers I have met with which occurred in stables have appeared to arise from the horse eating too greedily, swallowing his food when imperfectly chewed, or eating freely of food that is difficult of digestion. Young vigorous horses may digest the most unwholesome food; but such as have been debilitated by hard usage, and are rather advanced in age, become very weak in their digestive organs, and, when improperly fed, liable to apoplexy or staggers. I am convinced, that the only remedy for this disorder is a mixture of a powerful stimulant with a purgative. From whatever cause the disease may proceed, it has been clearly proved, that the stomach is loaded with undigested food, from a loss of vital energy; I would therefore advise, in the first place, the following ball to be given. It must be observed, however, that the veterinary practitioner is seldom consulted until the disease has made some progress; and it is owing, perhaps, more to the inattention of the proprietor of the horse, than the obstinacy of the disease, that it so often proves fatal.

Take, of

Calomel, three drams.

Carbonate of ammonia, two drams.

Ginger, three drams.

Aloës, six drams.—Syrup enough to form a ball.

STA—STO

The hard dung should be drawn from the rectum, and opening clysters injected. The ball should be followed by some stimulating fluid, which should be frequently repeated. When the dung becomes soft, and the horse appears to be getting better, let him drink frequently of oatmeal or wheat-flour gruel; a little cordial medicine may also be given, but he must be fed with great care, and be allowed no hay, for a few days after his recovery. The stimulating fluid above mentioned may be composed of warm salt water, with a little compound spirit of ammonia or mustard. See vol. i. and iii. of *White's Farriery*.

STALING OF BLOOD. See *Bloody Urine* and *Red Water*.

STALING, DIFFICULTY OF. See *Urine, Suppression of*.

STAVERS. See *Staggers*.

STAVESACRE. These seeds are sometimes used, either in powder or decoction, to destroy lice; internally they are poisonous: two drams have been found sufficient to destroy a glandered horse. Whenever they are employed, a muzzle is therefore requisite.

STEEL, SALT OF. This preparation is now called Sulphate of Iron: it is a good tonic medicine; the dose two or three drams.

STERNUM. The breast bone.

STIFLE JOINT. This joint is composed of the bones called *Os Femoris*, *Tibia* and *Patella*. See *Frontispiece*.

STOMACH. The horse's stomach is very small, considering the bulk of the animal, and in form somewhat like a bagpipe. It is situated behind the diaphragm, principally on the left side, with its expellent orifice extending across the spine to the right. It has two surfaces, which may be called its sides, though one is posterior and the other anterior; and two extremities, a large and small; the superior surface of the latter receives the œsophagus or gullet, and is termed its Cardiac Orifice; while the former ends in the duodenum, and is termed its Pyloric Orifice: this extremity, when the stomach is distended, extends the farthest back of the two. The situation of the stomach varies in some degree

STOMACH

with its distention : when moderately filled, it lies in an oblique transverse direction, with its great extremity a little forwards, and its two orifices superior, but the cardiac most so ; but when the stomach is much distended, the left extremity will press upon the diaphragm, and the right will be carried more posteriorly. In oxen and sheep, the first stomach, being very large, is found, when distended, to have its left extremity carried quite up into the left iliac region, that is, between the last rib and the hip, in which part it is punctured when a bullock is blown or hoven ; but such an idea of the horse's stomach would be very erroneous ; for this animal having a very small one, it can never occupy a similar situation. The stomach has externally a covering from the peritoneum, which adheres closely to it by means of its cellular membrane : its middle portion consists of muscular fibres, which are stronger in the horse, than in oxen and sheep. These fibres run in various directions, but are principally longitudinal and circular ; the latter are very thick and strong around the cardia, or that extremity in which the gullet terminates. The inner covering of the stomach consists of two portions, a cuticular and a villous. This kind of cuticular covering to nearly one-half of the stomach is peculiar to such animals as appear destined to live on grain, as horses, asses, rats, and mice. It may be considered in a slight degree as a species of gizzard, resembling the structure of those animals who have organs to make up for the want of teeth ; for a horse has not the means of remastication which oxen and sheep possess ; nor does he usually masticate his food sufficiently : the wants of the constitution stimulate him to swallow it hastily : he therefore devours his food greedily, and if there was not some other structure than the one common to stomachs in general, it would not be sufficiently digested. The insensibility of this cuticular coat may allow it to press in some degree on the food, and perform a slight trituration upon it. It is in consequence of this cuticular and insensible coat covering nearly one-half of the horse's stomach, that many medicines, of great activity and

STOMACH.

power in the human body, have but little effect on this animal: among these are sugar of lead, emetic tartar, white and blue vitriol, verdigris, arsenic, &c.; and it is to the same cause, perhaps, that we may attribute his being incapable of vomiting. The cuticular coat ends abruptly by a fringed end, and is very distinct from the villous coat. The villous coat being much larger in extent than the muscular, is thrown into folds, which are more considerable than those of the cuticular coat, and are largest towards the great extremity; towards the duodenum they become less, and when at the pylorus they form a fold that makes a kind of valve to this part of the stomach, preventing a return of the food, and its too speedy passage out. The folds not only hinder the too hasty passage of the food, but, by this means, apply the gastric juice more certainly to all the parts: but the principal end is to increase the secreting surface, which is here essentially necessary, as only one half of the horse's stomach has the power of secreting gastric juice. We here likewise see the utility of the saliva: for were the food to come into the stomach nearly dry, the gastric juice, being but a mucus, would not pervade all its parts, but it would be lost upon some, nor would the mass be soft enough to be spread in between the folds. - (*Blaine's Outlines of the Veterinary Art.*) Animals that ruminate or chew the cud have generally four stomachs; aliment is taken into the first and second stomach very little chewed; from this it is returned to the mouth to be more completely masticated, and when swallowed again passes into the third and fourth stomach; in the latter the digestive process is principally performed.

Stomach, Inflammation of. The stomach sometimes becomes inflamed, in consequence of poisons or improper medicines being given, and sometimes, but rarely, from the irritation of both. This state is generally indicated by trembling and shivering, and a great appearance of anxiety. In this, as in all other cases of internal inflammation, bleeding is the chief remedy to be relied on. To this may be added the use of clysters and oily laxatives, especially when botts are suspected to exist in the

STOMACH.

stomach. (See *Botts.*) If the inflammation arise from the improper use of medicine, oily and mucilaginous liquids will serve to dilute it, and sheath the sensible parts from their action. If corrosive sublimate be the cause, a solution of soap perhaps will be useful, as it will decompose any of the medicine which may remain; in short the only thing that can be done, besides bleeding, is to drench the horse with infusion of linseed. Fortunately inflammation of the stomach is a disease that does not often occur in horses, except from the improper use of strong medicines, and then the remedies above mentioned, if seasonably given, will generally be found effectual. No hay should be allowed for several days after the horse's recovery. It is asserted in Boardman's *Dictionary*, that "hellebore in the dose of half a dram will bring on sickness and efforts to vomit," but I have known half an ounce given twice a day without any violent effect. In the same dictionary it is stated, that "four ounces of emetic tartar have been given without exciting nausea, and eight ounces of sugar of lead without any perceptible effect." "*Opium*," the same writer observes, "has no particular power on the horse (this I deny); *four ounces* have been given, and have caused pain and inflammation in the stomach; but it has no apparent influence over the nervous system, nor does it alleviate pain. Tobacco in every form has been employed, even an infusion of three pounds has been given without effect." I have known an instance of a horse having been killed by taking a dose of tobacco infused in beer; and I have no hesitation in asserting, that opium, in the dose of one dram, has a very beneficial effect upon the nervous system of the horse; how else can it cure locked-jaw and the spasmodic or flatulent colic?

Oxen and sheep are liable to distention of the first stomach or paunch, from feeding greedily when first put into a rich pasture of clover; they are then said to be blown or hoven, and require immediate assistance. See *Blasting*.

Horses often injure themselves by feeding greedily; in

STO—STR

such cases the corn they eat is very imperfectly masticated, and consequently difficult of digestion. I have known three instances of the stomach having been ruptured by eating a large quantity of oats. The most acute and painful, and, at the same time, a dangerous kind of colic, is often produced by the same cause. This not unfrequently happens to post and coach horses, as they are often driven hard upon a full stomach.

STOMACHICS. Medicines that stimulate and strengthen the stomach. See vol. ii. of *White's Farriery*.

STONE. Stones are very rarely found in the horse's bladder; sometimes they are met with in the ureters and kidneys. In that part of the intestines named *cæcum* very large stones have been found. I have one which weighs eight pounds. This disease is never discovered, I believe, till after the horse's death. Vesical calculi have been successfully extracted from the horse by the operation of lithotomy.

STOPPING. Clay alone, or mixed with cow-dung, cow-dung alone, and tar mixed with grease, are employed for the purpose of stopping horses' feet, and keeping them cool. Mr. Cherry, veterinary surgeon, has lately substituted for these, pads of compressed felt, made to fit the foot, and moistened with water, which causing them to swell, prevents them from being displaced. They have the advantage of portability, and appear to answer the purpose for which they are intended very well. The practice of stopping horses' feet is very requisite, both with a view of preventing inflammation, and diminishing it when present.

STRAIN OF THE BACK SINEW. The flexor tendons, or back sinews, as they are commonly termed, consist principally of two tendons; one terminating in the bottom of the coffin bone, the other in the pastern. The latter serves as a sheath to the former. Between these tendons a slippery fluid is secreted, which enables them to move readily upon each other; in several parts, however, we may observe membranous bands passing from one tendon to the other: in violent exertions these membranes are ruptured; hence arises a greater or less

STRAIN.

degree of inflammation, swelling, and tenderness; in severe injuries coagulable lymph is effused, constituting the callous enlargement of old strains. An erroneous idea of the nature of strains very commonly prevails: it is supposed to consist in an extension of the tendon: but in dissecting an old strain, the tendon is always found in its natural state. Rest is the grand remedy for strains, and without it all others will prove ineffectual. It is by many supposed, that turning a horse to grass, when strained in the back sinews, is a better plan than keeping him in the stable: this, however, is by no means the case; at grass a horse will generally take so much exercise, as will tend rather to increase than diminish the lameness. A flannel bandage, kept constantly wet with the following lotion, is perhaps as good a remedy as can be employed for recent strains: as it cannot well be moistened during the night, it is better then to leave it off, and apply it again as early as possible in the morning, for the dry bandage would be injurious.

Take, Sulphate of zinc, four ounces.

Acetate of lead, six ounces.

Water, three quarts.

Vinegar, one quart.

In strains of ligaments of the fore or hind legs, the same mode of treatment is to be adopted. In very severe strains it is advisable to bleed copiously and give some opening medicine; and if any swelling remain in the leg after the inflammation has subsided, blistering or firing is necessary, but these are never proper until that period.

STRAIN OF THE SHOULDER. This may be distinguished by the difficulty the horse feels in extending the limb, and generally inclining it a little outward at the time he is advancing it, which arises from his throwing the chief weight of the body on the sound limb. In doing this, the head and neck are inclined to one side, and this it is that causes the peculiar motion of the other leg. Here also rest is at first the essential remedy; bleeding, opening medicine, and a rowel in the chest, are also proper. The whole of the shoulder

STRAIN.

should be well rubbed with the following embrocation twice or three times a day :

Soap liniment, four ounces.

Liquid carbonate of ammonia, one ounce.

In some cases of violent shoulder-strains the muscles are rent, and the lameness thereby occasioned requires long-continued rest ; and when this is not successful, but there appears to be a permanent contraction of the muscles, frequent swimming has been known to effect a cure.

STRAIN OF THE BACK. The muscles of the back are very frequently strained by over exertion, and sometimes the connecting ligaments of the vertebræ participate in the affection. It happens not unfrequently, where horses are habitually employed in carrying heavy burdens, that a slow ossific action, the consequence of inflammation, is established in the vertebral ligaments, by which these parts are converted into bone, and this anchylosed spine is occasionally fractured by some violent effort : the horse is then said to be chink-backed. (See *Chink-backed*.) This injury may likewise be termed a Strain of the Back, and is probably always accompanied by some strain of the muscles ; therefore the same treatment, namely, blood-letting, laxatives, the application of a fresh sheep's skin to the back, and the use of some stimulating embrocation (as that recommended in Strain of the Shoulder), will be proper for both.

STRAIN OF THE HIP JOINT. This seldom happens ; though almost every obscure lameness of the hind parts is attributed to it. It is often incurable ; rest and an extensive blister are the most probable remedies.

STRAIN OF THE STIFLE is indicated by swelling and tenderness of the part, and a difficulty in bringing forward the hind leg. As the injury in this case is generally deeply seated, a blister is the best remedy. The stifle joint is liable to other injuries, among which may be enumerated an increased secretion of synovia or joint-oil (for which rest and blistering are probably the best remedies, or, at any rate, should be resorted to, before more severe means be adopted) ; and displacement of the patella (see *Dislocation*), which may be either per-

STRAIN.

manent or transitory ; the first case has been noticed in speaking of dislocations, but the second I believe to be a consequence of a horse going wide behind, in order to avoid cutting, by which the balance of power between the adductores and abductores muscles being destroyed, the patella is liable to be partially dislocated upon any sudden movement; and this accident is known by the horse keeping his leg extended for some time. It is, however, soon remedied by the antagonist muscles to those in action regaining their power, and the patella resumes its natural situation with a very audible snap. No application whatever is necessary.

STRAIN OF THE KNEE. This injury is generally complicated with broken-knee, and therefore, in addition to the general treatment of strains by venesection and other antiphlogistic means, a large poultice may be applied by means of a stocking or flannel bag, a remedy which should always be used when the injured parts admit of its application.

STRAIN OF THE FETLOCK JOINT. This is occasioned by some sudden and violent exertion, as in leaping, by which some of the ligaments connected with the pastern joint are either partially or completely ruptured. In some cases the sesamoid bones are displaced. Rest, bleeding, physic and poultices, constitute the chief part of the treatment of these injuries.

STRAIN OF THE COFFIN JOINT may be known by the horse going tolerably sound at a walk, but very lame on being trotted; by great heat of the foot, extending to the pastern, and sometimes accompanied by swelling round the coronet. The symptoms are often obscure, but in this particular strain there is always an absence of other appearances, which may lead to a supposition of the lameness being dependent on some other cause. The shoe should be removed, the sole pared thin, and the whole foot, after taking a considerable quantity of blood from the toe, be wrapped in a large poultice. Blistering the pastern is sometimes necessary, but, if the above remedies, added to purgatives and a light diet, be timely put in practice, such treatment will not be required. See vol. iii. of *White's Farriery*, chap. xiii.

STR

STRANGLES. A disease incident to young horses, attacking them generally during the fourth and fifth year. It consists in a swelling under the jaws attended with cough, dulness of the eyes, and some degree of fever: soon after, a discharge from the nostrils usually takes place, the swelling increases, becomes tender, and at length suppurates. The abscess, if not opened, bursts, the horse is relieved, and gradually recovers. This is the usual progress of the disease when left to nature; and I have known many colts get through the disorder at grass without any assistance. The strangles sometimes attacks in a more severe form; the swelling and inflammation of the throat are so considerable as to prevent swallowing, and sometimes even to threaten suffocation. In this case the part should be frequently, and, indeed, almost constantly, fomented; or a large poultice should be applied so as to be completely in contact with the swelling: this, however, is not easily done; and I think, upon the whole, it is better to trust to the fomentation, by which the tumour will be brought to suppurate, and then the horse will be relieved. When the swelling has burst or been opened (and unless this opening is of sufficient extent to give free vent to the matter, it may be retained, and form sinuses or a fresh tumour), it may be dressed with digestive ointment and kept clean; by such management it will soon get well. I have generally applied some stimulating ointment, or a blister, to the throat, when there is great difficulty in swallowing, or a severe cough; and when the blister has produced its effect, have employed the fomentation, as before directed. As to the period when it is proper to open the tumour, I would by no means advise its being done, until the whole of it has become soft. (See *Abscess*.) When a horse is recovering from strangles, and has regained his appetite in some degree, a mild dose of physic should be given. See vol. i. of *White's Farriery*.

STRAW. Straw is frequently given as an article of diet to horses, especially on the continent, and, when good, is far preferable to bad hay. Its chief use in the stable, however, is for litter.

STRING-HALT. When a horse, on first going off,

STU—SUB

lifts his hind legs unusually high, or rather suddenly, as if the muscles were affected with spasm, he is said to have the **String-Halt**. Dissection has thrown no light either upon the cause or cure of this disorder: it may, perhaps, depend on some disease in the hock or fetlock joint, though not indicated by swelling, tenderness, or any other unusual appearance. When the string-halt is so considerable as to amount to lameness, it may be advisable to blister or fire these parts. The late Dr. Jenner was of opinion that string-halt was produced by a disease of the spine.

STUBS. When a horse is wounded by a splinter of wood about the foot or leg, he is said to be Stubbed. The wound should be carefully examined, and any splinter extracted that may be found in it; afterwards it is to be treated like other punctured wounds. See *Wounds*.

STUMBLING. This is frequently caused by an undue determination of blood to the frog, in consequence of compression of the sensible foot from contraction of the heels, which occasions the horse to go upon his toes in order to avoid the pain felt on touching the ground with the frog.

STURDY. A disease in sheep occasioned either by water in the cavities of the brain, or polypi pressing on it. See *Brain*.

STYPTICS. Medicines which stop bleeding. In veterinary practice, nothing of this kind should be depended upon. There are only three effectual methods of stopping bleeding, viz., tying the wounded or divided artery, both above and below the wound; pressure; and the hot iron. In internal bleedings or hæmorrhages, the treatment must depend upon the cause. See *Bloody Urine*.

SUBLIMATE. This is the most powerful of the mercurial preparations: in farcy and obstinate complaints of the skin, it has been given with good effect, but it must be used with caution. Externally it has been found useful when dissolved with an equal weight of muriatic acid in water; as in itching complaints of the skin, and in obstinate grease: I have found it also the best caustic for quitters. See *Corrosive Sublimate*, and vol. ii. of *White's Farriery*.

SUD—TAN

SUDORIFICS. Medicines which excite sweating. I believe that no medicine we are at present acquainted with will excite or promote this discharge in the horse with *safety* or certainty; the insensible perspiration, perhaps, may be increased by a mixture of emetic tartar, opium, and ginger, or by a mixture of ipecacuanha with opium.

SULPHUR. This is a favourite medicine of farriers, and is an ingredient in all their alteratives: I have given it in various doses without observing any particular effect, except that when given to the extent of three or four ounces it acts as a laxative. In cutaneous diseases it is certainly a valuable medicine. See *Mange*.

SULPHURIC ACID. Vitriolic acid. A powerful caustic. See *Acids*.

SULPHUR VIVUM. An impure kind of sulphur, sometimes containing arsenic. See *Mange*.

SUPPOSITORY. A solid composition thrust up the fundament.

SUPPURATION. When inflammation proceeds until matter forms in the part, it is said to have suppurated. See *Abscess* and *Inflammation*.

SURBATING. A term used by old farriers for inflammation of the foot.

SURFEIT. A disease of the skin, consisting in an eruption of small pustules or scabs: it appears to arise from a diseased state of the stomach and bowels. Give, in the first place, a mild purgative, afterwards a powder daily, composed of

Nitre, one ounce.

Levigated antimony, one ounce.—Mix.

In bad cases Ethiop's mineral, or a small quantity of calomel, may be added. See vol. i. of *White's Farriery*.

SWEETBREAD. See *Pancreas*.

SYNCOPE. Fainting.

SYNOVIA. Joint-oil: a mucilaginous fluid formed within joints, to render motion easy, or diminish friction.

T.

TABES. A wasting of the body. See *Consumption*.

TANSY. In human medicine tansy is used as a

TAR—TEE

vermifuge, but in veterinary practice it is employed only as an ingredient in fomentations.

TAR. Common tar is a good application for thrushes and other diseases of the frog. A mixture of tar and sulphuric acid (one ounce of the latter to a pound of the former), used when hot, is often serviceable in these diseases. Tar is also used as stopping for the feet, and is supposed to promote the growth of horn.

TAR, Barbadoes. A bituminous substance, possessing considerable diuretic powers, and said to be useful in chronic cough. It is sometimes employed externally, dissolved in oil of turpentine or elder, in case of strains and bruises.

TARTAR. An acid substance found adhering to casks in which wine has been kept : when purified, it is named Cream of Tartar. It is scarcely worth notice as a veterinary medicine.

Tartar, Oil of. Potash, when exposed to the air for some time, attracts sufficient water from the atmosphere to become fluid : in this state it is named Oil of Tartar, *per deliquium*.

Tartar, Salt of. See *Potash*.

Tartar, Emetic ; or Tartarized Antimony. See *Emetic Tartar and Antimony*.

TEETH. A horse has forty teeth when he has completed his full number ; a mare usually only thirty-six, being generally without tushes. They are divided into three kinds : the *Incisores*, cutting teeth or nippers ; the *Cuspidatæ*, or tushes ; and the *Molares*, or grinders. The horse, like most other quadrupeds, has, during life, two sets of teeth—a temporary and a permanent set : the first usually appears at or soon after birth ; the others appear gradually as the temporary set fall out ; and the change is completed during the fifth year of his age. It is a curious fact, that though the two sets of teeth appear with an interval of some years between them, yet the rudiments of both are formed nearly at the same period ; at least we know, that as soon as the temporary or colts' teeth are evident, the traces of the others can be distinguished immediately under them, and are only prevented from making their appearance

TEM—TEN

by the pressure of the first: thus, when one of the first set is drawn, its place is soon filled up by one of the second or permanent set; and this appears to be a reason for their early formation, that they may always be ready to fill up any accidental displacement that may occur before the usual period. Dealers often take advantage of this circumstance, and by drawing some of the colt's teeth make him appear older than he really is. It was essentially necessary there should be two sets of teeth; for, as they grow but slowly in proportion to the jaws, had there been but one set, the disproportion in growth between the teeth and jaws must have separated and made them wide apart as the jaws increased. The manner in which the temporary teeth are removed is very curious; it is occasioned by the pressure of the permanent teeth upon their roots; this causes a gradual absorption of the roots, so that after a time, having no support, they fall out. The grinding teeth of the upper jaw are sometimes found to have sharp points, from wearing unequally; this is sometimes so bad as to hinder mastication, and wound the inside of the cheeks; it is necessary in such cases to file them down with a concave or hollow rasp that is made for the purpose. We sometimes find next the first grinding tooth of the upper jaw a very small tooth, which farriers call a wolf's tooth; this is supposed, but without foundation, to cause a disease of the eyes. The edge of the first grinder is sometimes found considerably higher than the other parts of the tooth; this projecting point may be knocked off with a blunt chisel: another species of wolf's tooth is what the French call *Surdents*, and is a diseased increase of some one tooth. See *Age*, and vol. i. and iii. of *White's Farriery*.

TEMPORAL ARTERY. The mode of bleeding in the temporal artery is described under the head *Arteriotomy*.

TENACULUM. A kind of hook for laying hold of an artery.

TENDO ACHILLIS. The great tendon which is fixed or inserted into the *Calcaneum* or projecting bone of the hock.

TENDON. The white shining extremity of a muscle.

TEN—TES

When the flexor tendon of the leg is broken or divided, the ends are to be stitched together, and supported by a bandage: it is an accident, however, that rarely occurs. Mr. Feron says, he "has seen different instances of a complete rupture of the back sinews;" and he advises, "when it is clearly ascertained that the tendons are broken, to dispatch the animal as soon as possible, in order to save both trouble and expense."

TENESMUS. Continual efforts to void dung, without any discharge. It arises from irritation in the rectum, and is generally removed by emollient or anodyne clysters.

TENT. A piece of lint or tow smeared with ointment and thrust into a sore, in order to prevent a too hasty and superficial healing.

TERETES. See *Worms*.

TESTICLES. Two glandular bodies, contained in a sack or bag, named *Scrotum*. In all animals, the testicles are formed in the abdomen, and in some, as in birds, remain there. In the young colt they remain in the belly, immediately behind the kidneys, for some time after birth, when they begin gradually to appear within the scrotum. After the testicle has passed into the scrotum, carrying with it a covering from the peritoneum, a complete union takes place between that part and the spermatic cord; but the testicle itself is loosely invested by this production of the peritoneum, the vacancy between having generally a little fluid; this covering is named the *tunica vaginalis*. By this contrivance, in the human subject, there is no communication between the abdomen and the scrotum. This is a wise provision in man. for, from his erect position, were it not so, there would be a continual descent of some of the intestines into the scrotum, constituting the disease termed Inguinal Hernia: but quadrupeds, from their horizontal position, not being so liable to the descent of the intestines, have not the opening closed; in the horse, therefore, there is always a communication between the scrotum and the abdomen. In the human subject, an unusual quantity of fluid is sometimes formed between the tunica vaginalis and the testicle, causing the disease named Hydrocele, or dropsy of the testicle; this seldom

THE—THR

happens to horses. The semen secreted by the testicles is conveyed by the *vasa deferentia* to the *vesiculæ seminales*, from which it is expelled in coition. The operation of cutting out the testicles has been already explained. See *Castration*.

THECA. A case or covering: a name given to the sheath of the flexor tendons.

THORACIC DUCT. The trunk of the absorbents. See *Absorbents*.

THORAX. The cavity of the chest, which contains the lungs, heart, part of the windpipe and gullet, and the roots of the blood-vessels. It is separated from the abdomen by a strong muscle named Diaphragm, and divided into two parts by a duplicature of the pleura, called *Mediastinum*.

THORN. When a horse is wounded by a thorn, it must be carefully drawn out with forceps or small pliers, and, if necessary, an incision should be made, to render its extraction more easy: the sooner this is done the better, as inflammation will soon come on, and render the operation difficult, if not impracticable. When the thorn cannot be removed, suppuration in the part must be encouraged by poultices.

THOROUGH-PIN. A swelling on the inside and outside of the hock, of the same nature as the bog spavin: when pressed on one side, the fluid within the tumour is forced to the opposite, and from this circumstance it has obtained the absurd name of Thorough-Pin. It seldom causes lameness, and unless it does, had better be left to nature. When any inconvenience or stiffness in the joint is occasioned by it, blistering or firing is more likely to be beneficial than milder applications,

THORTER ILL. A paralytic disorder incident to sheep: it is said to arise sometimes from their eating some poisonous or narcotic plant; more frequently, perhaps, it depends on general weakness from insufficient food: a nourishing diet and cordials are the best remedies.

THROMBUS. A name given to a tumour which sometimes forms in the neck after bleeding, from blood getting into the cellular membrane: it generally soon

THR—TIC

goes off again; if not, let it be rubbed with soap liniment.

SOAP LINIMENT.

Hard soap, one ounce.

Camphor, one ounce.

Oil of rosemary, one ounce.

Rectified spirit, one pint.

Slice the soap, and, when dissolved in the spirit, add the other ingredients.

THRUSH. A disease of the horse's frog, consisting in a discharge of stinking matter from its cleft or division; sometimes the other parts of the frog are also affected, becoming soft, ragged, and incapable of affording protection to the sensible frog which it covers. Having removed the shoe, pare away any ragged parts there may be, so as to expose fully the diseased surface; after cleaning the frog perfectly, apply a solution of white or blue vitriol, and a short time after, pour some melted tar ointment into the cleft of the frog; let its whole surface be covered with tow that has been dipped in the same ointment, and upon the tow place a flat piece of wood about the width of the frog; one of its ends passed under the toe of the shoe, the other extending to the back part of the frog and bound down by transverse slips of wood, the ends of which are to be placed under the shoe. The moderate pressure thus applied will contribute materially to the cure, and to the reproduction of solid horn; this dressing must be repeated daily. Thrushes are sometimes attended with inflammation of the foot and lameness, particularly when the heels are much contracted, or drawn together so as to compress and inflame the sensible frog; in this case a poultice is proper for two or three days, by which the horn will be softened, and the contractile tendency diminished. See vol. iii. of my *Veterinary Medicine*.

TIBIA. The bone of the horse's thigh, that is, the bone between the hock and the stifle, is thus named. In man, the large bone of the leg is called Tibia.

TICKS. Insects which infest sheep, dogs, and some other animals. A strong infusion of tobacco will quickly destroy them.

TIN—TRA

TIN. This metal is said to be capable of destroying worms in horses and dogs. See *Worms*.

TINCTURES. Preparations made by infusing vegetable or other substances in proof spirit, as the tinctures of benzoin and opium.

TOBACCO. An infusion of tobacco is as effectual an application as any, for destroying lice, fleas, ticks, and other insects which infest the skin. It has been given internally, but is attended with danger. In one instance that came within my knowledge, a horse was quickly destroyed by taking an infusion of tobacco in beer. I have been informed, that in India tobacco is sometimes given with the bark of the castor-tree root, as an expeditious purgative.

TONGUE. The tongue is a muscular substance, composed of fibres variously arranged, by which it is rendered capable of that diversity of motion which we observe; it has also several muscles attached to it: the small bone to which it has a muscular attachment is named *Ox Hyoides*. I have met with several cases where several inches of the tongue have been lost without any apparent inconvenience being sustained by it. In giving balls awkwardly, the bridle or membrane under the tongue is sometimes lacerated; but it soon gets well if syringed with a solution of alum.

TONICS. Medicines that augment the strength of the body: the mineral tonics are preparations of copper, zinc, iron, and arsenic; the vegetable tonics are Peruvian and oak bark, cascarilla bark, gentian, quassia, &c. See vol. ii. of my *Veterinary Medicine*.

TONSILS. Two glands situated one on each side of the root of the tongue: they secrete a mucous fluid for lubricating the adjacent parts.

TOPICAL BLEEDING. Opening a vein or artery near any affected part; and, in the human being, bleeding by means of leeches or cupping glasses.

TOPICAL REMEDIES are such as are applied to any particular part.

TORMENTIL. The root possesses an astringent quality.

TRAINING. By the word *training* is meant putting a horse in that state in which all the functions of the body are carried on with vigour, and the animal being in

TRA

perfect health, and accustomed to regular exercise, is capable of going through as much fatigue as his natural constitution will admit of. In order to bring a horse to this desirable state, the very greatest attention must be paid to his diet; he must have regular exercise, which, at first gentle, is afterwards gradually to be increased according to the exertions required of him; the greatest care must be taken of his health in every respect; he must be well groomed; be regular in his habits, that is to say, in his hours of feeding, exercising, sleeping, &c., and, in short, every possible care must be taken to preserve him in a perfect state of health; and this point once attained, the horse is said to be *in good condition*, though by many this expression is used to imply fat. As the rules for getting a healthy horse in condition would be but a repetition of many parts of this work, I shall content myself with referring the reader to the articles *Food, Feeding, Appetite, Exercise, Diet, Hay, Oats, Beans, and Water*. Should the horse labour under any disease or malady, its proper treatment will be found explained under its name; and be it remembered that no horse can be said to be *in proper condition*, while affected with any disorder, although such a horse, while undergoing a cure, may be said to be *in training*, in like manner as though, being in perfect health, he were training in order to become accustomed to fatigue, to acquire wind, speed, proper action, or any other quality in which he might be deficient. See vol. i. of *White's Farriery, or Veterinary Medicine*.

TRANSFUSION. An operation by which blood is conveyed from the vessels of one animal to those of another.

TRAUMATIC BALSAM. This is nearly the same as Friar's balsam, and the compound tincture of benzoin: it is used chiefly as an application to wounds and ulcers. The following is the formula of the London College:

Take, of Benzoin, three ounces.

Purified storax, two ounces.

Balsam of Tolu, one ounce.

Socotrine aloës, half an ounce.

Rectified spirit of wine, two pints.—Digest for seven days, and filter.

TRAVELLING. Previous to beginning a long journey

TRE—TUB

a horse should be got into good condition (see *Training*): he should be shod about a week before he sets off, and his feet be kept constantly stopped with tar ointment, which is made by boiling equal parts of tar and tallow together. About two hours before he is to begin his work he should be fed and watered, and on the road but little hay should be allowed him, and a quantity of corn commensurate with his work. A peck and a half of oats a day, with eight pounds of hay, will not be too much if he perform from sixteen to twenty miles daily. He should never be allowed to drink while warm; his rack and manger, on entering a strange stable, should be well wiped, to remove any glanderous or other matter that may adhere to them. Care should be taken to keep him, when in the stable, in as equal a temperature as possible, by appropriate clothing, and avoiding all draughts and damps: his feet, but not his legs, should be well washed wherever he rests, and at night should be well stopped with fresh cow-dung. In addition to these hints, it will be well to divide his feeds into four portions, giving the largest in the morning and at night.

TREAD. Horses are liable to receive severe bruises about the coronet, either by a tread from another horse, as often happens in the army, by a horse in the rear rank treading on the heels of one in the front rank, or by an over-reach of the hind foot: sometimes the injury is slight, and soon cured by the application of Friar's balsam or tincture of myrrh, having first carefully removed any dirt or gravel that may have got into the wound; the best manner of applying the balsam is to soak a piece of lint in it, and bind it on the part. When the tread has been more violent, considerable inflammation often takes place, and sometimes matter forms, and penetrating under the hoof, becomes a Quittor. When the inflammation is considerable, a poultice should be applied for a few days, and afterwards a solution of white vitriol or alum. See *Bruises*.

TREVIS. See *Break*.

TRUNK. The body or carcass of an animal.

TUBERCLES. Small tumours that sometimes suppurate and discharge pus: they are often found in the lungs. See *Consumption*.

TUE—TUR

TUEL. A name sometimes used for the horse's fundament.

TUMOUR. A swelling on any part of the body. Tumours are of various kinds; sometimes caused by bruises or other accidents; at others arising without any visible cause. Inflamed tumours require cooling applications, such as solution of sugar of lead or Goulard's extract in water; but if they tend to suppuration, the formation of matter should be promoted by fomentation or poultice; hard indolent tumours, that are neither inflamed nor painful, should have some stimulating liniment or ointment, or even a blister, rubbed on them: some tumours, such as wens, can only be removed by excision.

TUNIC. A coat or membrane investing a part, such as the tunica vaginalis of the testicle.

TURBINATED BONES. The thin spongy processes of the ethmoid bone within the nostrils: in the horse they are remarkably large, and often diseased in glanders.

TURGESCE. An over-fulness of the vessels in any part.

TURMERIC. Turmeric root is an aromatic stimulant of moderate strength: it does not possess any peculiar virtues, though highly esteemed by farriers, and an ingredient in the greater part of their powders and drenches: it is considered by them as a remedy for jaundice or yellows, probably on account of its yellow colour.

URNSICK. See *Brain, Dropsy of*.

TURPENTINE. The resinous juices of certain trees. There are four kinds, viz. Strasburgh, Chio, Venice, and common turpentine. The two last only are employed in veterinary medicine. They are excellent diuretics and carminatives. Common turpentine is an ingredient in digestive and detergent ointments, and by distillation affords the essential oil, or as it is sometimes named, Spirit of Turpentine. Oil of turpentine is a good remedy for the flatulent colic; the dose from two to four ounces, mixed with gruel. In the human subject it has been found an effectual remedy for the tape worm, in the dose of one ounce or more. It acts as a brisk purgative in such large doses; but in small quantities it has a diuretic effect. In the horse it is the

TUR—UDD

most certain diuretic we are acquainted with. Oil of turpentine, when rubbed upon the skin of animals, causes considerable irritation and pain ; when used therefore as an embrocation it is generally mixed with some fixed oil, such as the oil of olives. Venice turpentine is usually made by melting and straining the common turpentine, and then adding a small proportion of the oil of turpentine.

TURPETH OF TURBITH MINERAL, OF YELLOW SUBSULPHATE OF QUICKSILVER OR MERCURY. This mercurial preparation is seldom administered to horses : it is given as an emetic to dogs ; the dose for one of a middling size is about four grains, mixed with butter.

TWITCH. An instrument, made by fixing a noose of cord to the end of a stick : this is put on the horse's upperlip and twisted rather tight, which makes him stand quietly during an operation.

TYPANY. A distention of the abdomen by air. There are two kinds of tympany ; one caused by air confined within the intestines ; in the other, the air is exterior to the intestines, and within the abdomen. Of the former kind we may consider flatulent colic, blown, or hoven, and the distention which takes place sometimes from crib-biting. The horse does not appear to be subject to the latter kind, or abdominal tympany.

TYPHUS. Low, nervous, or putrid fever. See *Fever*.

U.

UDDER. The udder is a glandular substance, whose office is to secrete milk. It is divided in the cow into four quarters ; each of which has an excretory duct, or teat, whose use is to facilitate the extraction of the milk. At the extremity of each teat is a contrivance for the purpose of retaining the fluid contained in the udder until it becomes much distended ; when, if not drawn off by hand or suction, it flows spontaneously, and the animal is thereby partly relieved of her burden. Sometimes the udder swells and becomes sore ; this is technically termed *Udder ill*, and is often caused by improper feeding, as the very greatest sympathy exists between the stomach and udder. In this case the cow

ULC

may be drenched with salt (about four ounces) and warm gruel; to which may be added a little aloës or some olive oil; or a clyster, composed of similar ingredients, may be administered; and if inflammation be present, bleeding may be requisite; but this must be determined by the state of the pulse. (See *Pulse*.) The udder should be frequently fomented and smeared with olive oil, and the milk should be gently drawn off several times a day. Should the swelling continue, and not appear painful, the following embrocation may be used:

Olive oil, three ounces.

Oil of turpentine, one ounce.

Camphor, two drams.—Mix.

Sometimes abscess forms in the udder in consequence of inattention to drawing off the milk. When this is the case, it should be opened in the most depending part, that the matter may run freely off. Occasionally, instead of suppurating, the udder becomes thickened, the cells of the gland destroyed, and the animal recovers her health spontaneously: but where, in lieu of this, the udder opens naturally, in order to give vent to the confined matter, there is frequently a morbid growth of fungus from the gland: however, this, if left to itself, will in time disappear.

ULCERS. Ulcers may arise from a variety of causes, and are usually divided into—1. The Simple Ulcer, which takes place generally from a superficial wound or bruise. 2. The Sinuous, that runs under the integuments, and the orifice of which is narrow, but not callous. 3. The Fistulous Ulcer or fistula, a deep ulcer with a narrow and callous orifice. 4. The Fungous Ulcer, the surface of which is covered with fungous flesh. 5. The Gangrenous or Putrid Ulcer. 6. The Carious Ulcer, depending upon a carious bone or cartilage. 7. The Glanderous Ulcer. 8. The Cancerous Ulcer, or that which constitutes the canker of the horse's foot. The simple ulcer of horses will generally heal spontaneously, or by the application of some mild astringent, such as solution of alum, or tincture of myrrh; but if it be foul or callous in any part, an escharotic application

URE

will be proper; such as burnt alum or red precipitate. In the sinuous ulcer, the sinuses or hollow part should be completely laid open with a knife. The first dressing should be with the escharotic powder or solution of blue vitriol, afterwards with some mild astringent. The fistulous ulcer must also be laid open as far as it is practicable, as has been described under the heads *Fistula* and *Poll Evil*; it requires at first caustic, by which means it is brought to the state of a simple ulcer. In the fungous ulcer, the spongy flesh is to be removed with a knife, and the sore dressed with escharotic powder until it becomes a simple ulcer. In the carious ulcer, it is necessary to expose the foul bone or cartilage, so that it may be scraped with a drawing knife or any other more convenient instrument; it is then to be dressed with tincture of myrrh or astringents. The glanderous ulcer, when it occurs within the nostrils, is generally incurable; and though it may have healed sometimes when small, and so low down as to admit of mild caustic being applied, the constitution remains diseased, and fresh ulcers take place in other parts of the nose. When glanderous ulcers occur on the skin, as in farcy, they may generally be healed by mild caustic: but in this case also, it often happens that the constitution is tainted, and the supposed cure is followed by glanders. (See *Farcy* and *Glanders*, in vol. iii. of my *Veterinary Medicine*.) In the treatment of simple ulcers it has been too much the practice to dress solely with ointments, which often retard the healing, and encourage the growth of spongy flesh. It is also usual to cover them with plasters and bandages; but I have always found that they heal more readily when exposed to the air.

URETERS. Two small tubes by which the urine is conveyed from the kidneys to the bladder.

URETHRA. A membranous and muscular canal by which the urine is conveyed from the bladder. It is of considerable length in the horse, but is seldom if ever obstructed. In passing over the bones of the pubis, the curvature it makes is such, that a catheter cannot be introduced into the bladder, unless an opening be made

URINE.

for this purpose in the perineum and back part of the urethra. In mares and cows, the urethra is very short and large, and there is no difficulty in evacuating the urine by introducing the finger and keeping the neck of the bladder open.

URINE, EXCESSIVE DISCHARGE OF. See *Diabetes*.

URINE, INCONTINENCE OF. See *Incontinence of Urine*.

URINE, SUPPRESSION OF. The term Suppression of Urine implies that none or very little is secreted by the kidneys; and Retention of Urine means that urine is secreted but cannot be evacuated. The former often depends upon inflammation of the kidneys, or a gradual decay in their structure having taken place. Sometimes, however, it may arise from a torpor of the secreting vessels. Inflammation of the kidney is easily distinguished by the fever which attends it, the pain the animal suffers, standing with his legs out and wide, as in the act of staling, and constantly endeavouring to stale, though there is scarcely any thing in the bladder: and upon examining the bladders of such horses after death, they have been found not only empty, but free from any appearance of disease. When the kidneys undergo a gradual decay, it is probable that the improper use of strong diuretics has contributed to the production of the disorder. This disease is not manifested by any particular symptoms, until the decay has made considerable progress. The horse is attacked now and then with stoppage in the water, as it is termed, and is often relieved for a time by diuretics: at length eruptions appear on different parts of the body; and when a total suppression takes place from the structure of the kidneys being so destroyed that they can no longer secrete any urine, the animal soon dies. In such cases, the bladder does not appear to sympathise with the kidneys, as in acute inflammation of those organs; for the horse is not constantly endeavouring to stale. Gibson relates a case of decayed kidneys in a miller's horse, caused by carrying heavy burthens. "This horse," he says, "was often subject to suppression of

URINE.

urine; and though he was always relieved by timely applications, yet these became more frequent as he grew old. At his last attack, he continued three days before he died, without staling or showing the least disposition to do so; during this time he never stood wide and straddling, but moved his hind legs, and crossed them with great ease: at length his legs and whole body swelled and broke out all over in moist watery blotches. After death the kidneys were examined; nothing remained of the right kidney but a small hard substance about the size of a pullet's egg, almost ossified, and of no regular shape. The left kidney was extremely large, and spongy in some places, in others scirrhus, and broken into several ragged interstices, and so mangled that nothing of its original texture remained." Retention of urine is caused by inflammation or some other disease of the neck of the bladder, or by the bladder itself having lost its power of contracting. When the bladder is distended with urine, it may be easily felt by introducing the hand within the rectum. When this is found to be the case, it is evident that the kidneys perform their functions: the principal object then is to cause the accumulated urine to be discharged; and, of course, to avoid every thing which may have a tendency to increase the secretion of urine. If there is any degree of fever, bleeding is proper: a dose of castor oil and a laxative clyster are to be given. If relief be not afforded by these means, and it be clearly ascertained that the bladder is distended with urine, it will be necessary to have recourse to an operation for drawing it off. In mares, it has before been observed, the urethra is short and large, and it is easy to introduce a short tube or even the finger into the bladder, and by keeping open its neck suffer the urine to flow out. In the horse, however, it is necessary to pass a long piece of smooth round whale-bone up the urethra as far as it will readily go; the end of it will then be felt a few inches under the fundament: upon this end an incision is to be made, and through this opening a catheter may be introduced, and the urine discharged. Having ac-

UTE

complished this object, let the following ball be given, which will probably remove the disease in the neck of the bladder, which caused the retention of urine.

Take, of Camphor, two drams.

Powdered opium, half a dram.

Nitre, one ounce.

Flour and syrup enough to form a ball.

As weakness in the muscular coat of the bladder is likely to follow, if it did not contribute to the production of the complaint, it will be highly necessary to guard against a return of the disease: very little water should be allowed for some days, and every thing of a diuretic nature carefully avoided. An accumulation of urine is sometimes produced by riding a horse for a considerable time, and urging him forward, without allowing him to stale: and this is more likely to happen, should the groom have given him a urine ball, which is not an unfrequent occurrence. The bladder, by such treatment, becomes unusually irritable, and contracts upon a smaller quantity of urine than it did in its healthy state; consequently he wants to stale the more frequently.

UTERUS. The womb. The uterus of the mare is very unlike that of the human subject, in whom it consists only of one bag, rather of an oval shape, somewhat resembling a pear; but in the mare and other quadrupeds it has a body, and two branches called its horns. The uterus terminates in the vagina by a narrow portion called the neck or mouth of the womb: the extremities of these horns have tubes attached to them, which, from the name of the discoverer, are called Fallopian Tubes; one end of each is expanded, and has a fringed kind of edge: this is named the Fimbria of the Fallopian tube. The Fallopian tube is very tortuous in its form; and that end which proceeds from the horn of the uterus is extremely small; but the other, which is slightly attached to the ovarium, is considerably larger. The ovarium is an oblong body, about the size of a small egg, attached, as before observed, to the extremity of the Fallopian tube. The ovaria, for there are two, are

UVU—VEI

composed of a number of transparent vesiculæ, called Ova (eggs); each ovum is surrounded with cellular membrane; and when the ovum is impregnated and passes into the uterus, it leaves a mark which is named Corpus Luteum.

UVULA. In the human subject, the small flesh-like substance hanging in the middle and back part of the throat is thus named. In the horse this is of a very different form. The uvula completely closes the opening to the pharynx, though it readily yields to the passage of food or any liquid towards the gullet; it prevents, however, the return of any thing to the mouth, even the air that is expired from the lungs, unless it be thrown aside by a violent effort, as in coughing. It is on this account that, when the horse is affected with nausea, or has the action of the stomach inverted, which sometimes happens, though very rarely, the contents of the stomach will be discharged through the nostrils; but if the horse happens to cough while it is in the pharynx, some part will be discharged by the mouth. I have seen this take place in one instance, and then a considerable quantity of the contents of the stomach was discharged by the mouth.

V.

VAGINA. The passage from the external pudendum, or shape, to the mouth of the uterus.

VALERIAN. The root of valerian is said to possess an antispasmodic power; but it is not likely to prove useful in veterinary medicine.

VARIX. The dilatation of a vein.

VEINS. In describing the circulation of the blood, it was observed, that where the arteries terminated, the veins began. There is a difference in structure between the veins and the arteries: the latter, by means of their muscular coat, contract upon the blood which they receive from the heart, and propel it forward to their extremities; here the veins begin, or rather the extremities of the arteries become the ex-

VEN—VER

trémities of veins. The arteries, as they proceed from their source, become gradually smaller: after terminating in veins, they gradually increase in size, and become less or fewer in number as they return to the heart; till at last they all form two large veins, viz. the posterior and anterior cava, which terminate in the right auricle of the heart. (See *Heart*.) The texture of veins is much more slender than that of arteries, yet they possess considerable strength; and though sometimes distended, seldom burst. The veins generally accompany the arteries; but as they are subject to pressure from the action of the muscles, and their coats are not sufficiently strong, like the arteries, to resist it, they are more numerous than the arteries; and there is besides a superficial set of veins which are not accompanied by arteries. The veins are provided with valves, which appear to be a duplicature of their inner coat, rising into a kind of curtain or fold. In the human subject there are two of these folds to form the valve; but in the horse there are three: these, when the blood by pressure is stopped in its course, prevent it from returning. The valves are not equally distributed throughout the veins: in some they are numerous; in others, as in those of the foot, there are none: there are but few in the viscera, and none in the glands. The blood is returned to the heart by a regular flow; the veins having no pulsation like an artery, nor any contractile power. Inflammation of a vein is sometimes a consequence of bleeding, especially if it be carelessly pinned up, or the operator's fingers or his fleam be smeared with blistering ointment, glanderous or greasy matter, or other filth. Occasionally the inflammation runs its course along the vein to the heart, and terminates fatally. Generally, however, if the jugular be injured, a swelling of the parotid gland and obliteration of the vein are the consequences. See *Wounds*.

VENTRICLE. One of the cavities of the heart. See *Heart*.

VERDIGRIS. The rust of copper, formed by means of vinegar or wine-lees. It has been recommended in farcy, in the dose of two or three drams; but I have

VER—VIT

never seen it do any good. It is a useful ingredient in digestive ointment, and acts, when applied to an ulcer alone, as a mild escharotic. Chrystallized verdigris is stronger and preferable for external use to common verdigris.

VERJUICE. Vinegar made from the crab-apple. It is stronger than common vinegar.

VERMIFUGE. A medicine that destroys or expels worms. Calomel and aloës are considered the most effectual vermifuges in the horse. Tin also is said to have a vermifuge power, particularly in dogs. See *Worms*.

VERTIBRÆ. The bones of the neck and spine. See *Spine*.

VERTIGO. A slight degree of apoplexy, which at times, particularly when going rather fast, makes a horse stagger or reel, but not often fall; the fit generally goes off by suffering him to stand quietly a short time, and if he falls the fit usually soon leaves him, and he gets up again. Moderate bleeding, and a dose of mild physic, are the best remedies. The disease is commonly termed *Megrims*.

VESICATORY. A blister.

VINEGAR. This is a cheap and useful article of the Veterinary Materia Medica, and is much used either alone, diluted, or mixed with other substances, as an application to bruises, strains, swellings, &c. A solution of sugar of lead in vinegar is nearly similar to Goulard's extract.

VISCERA. The plural of *Viscus*, a term applied to the internal organs of the body, as the lungs, bowels, &c.

VISCOUS. Glutinous, sticky, like bird-lime.

VITRIOL. A common name for many preparations; thus we have white vitriol, blue vitriol, green vitriol, oil of vitriol, &c. This common name is derived from that of the acid from which they are formed, formerly called Vitriolic Acid, and now named, by the College, Sulphuric Acid; consequently the preparations or compounds formed from it are named Sulphates. Thus white vitriol is now called Sulphate of Zinc; blue vi-

VIT—WAT

triol, Sulphate of Copper; green vitriol, Sulphate of Iron.

VITRIOLIC ACID. Oil of vitriol. See *Acid*.

VIVES. A swelling of the parotid gland, which is situated between the ear and the angle of the jaw. When the tumour is inflamed and painful, fomentation or poultice is proper; if hard, and free from tenderness, apply some stimulating embrocation or blister. If it suppurate, it is to be treated as an abscess. See *Abscess*.

VOMICA. Abscess, or ulcer of the lungs.

VOMITING. See *Stomach*.

VULVA. A name given to the external parts of generation in females.

W.

WALL EYES. A horse is said to have a wall eye, when the iris is of a light or white colour. According to Gibson, wall-eyed horses are generally good.

WARBLES. Small, hard, but inflamed swellings in a horse's back, caused by the pressure or heat of the saddle. They are to be bathed frequently with vinegar, or a solution of sugar of lead in vinegar, or crude sal ammoniac dissolved in vinegar. When warbles are much inflamed, these applications require to be diluted. See *Galls*.

WARRANT, WARRANTRY, or WARRANTY. When a horse is purchased with a warranty of soundness, the purchaser should have the conditions of the bargain fully expressed on a stamp receipt, in the following form:

Received of ——— the sum of ———
for a ———, warranted perfectly sound,
free from every kind of vice and blemish, and
between — and — years old.

If the horse is purchased for harness, it should be added, "steady in harness, not given to kicking, rearing, or jibbing."

WARTS. Spongy excrescences which arise in various parts of the body. The knife is the best remedy.

WATER. The purest water is certainly the most

WEN—WIN

wholesome. In summer, river water is better for horses than that taken from deep wells; but in winter, well water is to be preferred, because it is then many degrees warmer than river water. When the latter is used in winter, it should stand in the stable some time before it is given, that it may lose its chillness in some degree, and the same rule should be observed with regard to well water when it is used in summer. I have often seen the flatulent colic and shivering produced by giving horses water from a deep well, in hot weather, immediately after it is pumped up. Water impregnated with saline matter, even in a slight degree, is unwholesome for horses. Water kept in casks is apt to acquire an unpleasant smell, and is therefore injurious. Horses should be watered three times a day, allowing about half a pailful each time. Walking exercise after watering is useful, particularly in the morning; but trotting or galloping is very injurious. Pond water, from a clay bottom, is by some preferred to running water; but in summer, stagnant water often becomes putrid and nauseous, and is therefore improper.

WENS. Hard tumours of various sizes, in different parts of the body. The most effectual method of removing them is, to dissect them out together with the cyst in which they are formed. The skin is then to be stitched and treated as a simple incised wound.

WHIRL BONE, or ROUND BONE. The hip joint is generally thus named. It is supposed, but, I believe, very erroneously, to be frequently the seat of lameness. Obscure lamenesses of the fore parts are generally supposed by grooms and smiths to be in the shoulder; and those of the hind parts are as commonly referred to the whirl bone.

WHITE WATER. Water containing bran or oatmeal is thus named. It is a common practice, after a severe day's hunting, or other fatiguing exercise, to give a horse some tepid water, into which about a pint or a quart of oatmeal has been stirred. Many horses that are bad feeders are thus made to receive some sustenance at a time when they are incapable of eating.

WIND. The most effectual method of bringing a

WIN—WOR

horse into good wind is, to give him regular exercise very gradually increased, good hay, and oats in a quantity proportioned to his exercise; but the quantity of hay should be moderate at all times; water three times a day in a moderate quantity; a stable properly ventilated, and a dose or two of mild physic. See vol. i. of *White's Farriery*, Art. *Training*.

WINDGALLS. Elastic tumours on each side of the back sinews, immediately above the fetlock joint: they consist of enlarged mucous capsules, and are generally caused by hard work at too early an age. They do not often occasion lameness, and unless so considerable as to cause some degree of stiffness in the joint, had better be only bandaged, or have some stimulating embrocation well rubbed in; but when they cause lameness, or are attended with weakness of the fetlock joint, firing, blistering, and rest, are the best remedies. Dr. Bracken says, "If rest and running at grass do not answer, the best method is to open the tumours, and thereby discharge the brownish gelatinous fluid contained in the cyst. This should be done while the horse is standing, with the opposite foot held up; that by this means the windgalls may be more full and apparent." After cutting through the whole extent of the tumour, he advises some escharotic powder to be applied, in order to consume the cyst or bag. Mr. John Lawrence relates a case, which, he says, was so completely cured by this operation, that the horse afterwards won a match, and was then sold to carry a lady. I believe the operation will be generally found worse than the disease. See vol. iii. of *White's Farriery*.

WITHERS. The part where the mane ends is thus named in the horse. See *Frontispiece*.

WOLVES' TEETH. See *Teeth*.

WORMING. An operation performed on puppies for the purpose of preventing them from biting, should they happen to become mad. It consists in making an incision underneath the tongue, and drawing out with a hook a small worm-like ligament. It is recommended by Mr. Daniel in his *Rural Sports*, where the operation is particularly described.

WORMS.

WORMS. The stomach and bowels of horses are liable to be infested with different kinds of worms ; but as the same treatment is proper, of whatever kind they may be, it is needless to enter into a particular description of them. The most certain sign of worms, except that of their being voided with the dung, is the appearance of a light yellowish matter immediately under the fundament. The inconvenience produced by worms is that of making a horse thin and hide-bound, giving him a dry staring coat, causing some degree of languor and weakness, and in some instances slight attacks of colic. Worms however often exist in the bowels in considerable number, without producing these effects. Botts are often found in the horse's stomach, when their existence had not been suspected while the animal was living ; and even about the pylorus they are sometimes found in such numbers as almost to plug it up, without having caused inconvenience during life ; however, in some instances, botts have induced the most serious diseases. (See *Botts*.) I do not think it has hitherto been remarked by any veterinary author, that worms are sometimes found in the great mesenteric artery of horses and asses, and that in all such cases the animal has been emaciated and hide-bound. It is remarkable, that young asses, that have been half-starved, and sold for the purpose of dissection, are often found in this state. I have, in one instance only, found small worms in the wind-pipe of an ass, which appeared to be the cause of his death. Horses that die of mesenteric consumption have generally the great mesenteric artery enlarged, its coats considerably thickened, and within it many small worms. A worm is sometimes found in the eyes of horses ; but this, I believe, is peculiar to hot climates ; and it is remarked in a book, published in India, by M. A. de l'Etang, that no European author has noticed it. I have been favoured with a description of this disease by a gentleman, who has been for some time resident in India, and he confirms the following account of this extraordinary worm by M. A. de l'Etang. "The first symptom is a light-coloured cloud covering the eye ; a circle is formed on what is termed the apple of the eye, and

WORMS.

seems to prescribe limits to a worm, which really exists in it, and appears by constant motion to endeavour to escape. The horse feels no particular pain, but is deprived of sight, until the worm is extracted by the following operation. Let the horse be thrown down, open his eyelids widely (this may be effected by means of the handle of a key, which at the same time will keep the eye steady), make with a small lancet an incision of two lines (one sixth of an inch) deep, and five or six long, either over or under the apple of the eye, taking care not to touch it. A fluid with the worm will immediately come out. The eye is afterwards to be covered from the light." (See *Eye, Diseases of*.) Insects, termed Flukes, and somewhat like a flat fish, are found in the livers of sheep that have the hepatic or liver rot. Worms are sometimes fatal to poultry, particularly turkeys. Mr. Weinsenthal observes, in the *Medical and Physical Journal*, "that the inconvenience experienced by poultry from this cause is at first but slight; gradually, however, it becomes more oppressive, until the animal dies. Very few recover: they languish, grow dispirited, droop, and die."

In the treatment of horses that have worms in the bowels, I believe that mercurial purgatives are the most effectual. Gibson, a very respectable author, thought sarsaparilla a good remedy: I have not found it so. Ethiop's mineral and antimony have also been thought good vermifuges, probably without sufficient foundation. A brown-coloured salt, brought from India, has also been recommended; it appears to be nothing more than common salt, with a small proportion of sulphur or liver of sulphur. In one case sulphuret of iron was given with a good effect to a horse that had worms. Mercurial purgatives, however, are the most certain remedies. The best method of exhibiting the mercurial medicine is to give, for two or three successive nights, a dram or a dram and a half of calomel, and the morning after the last dose, a purgative ball. Gibson observes, that most of the preparations of antimony are efficacious for destroying worms. I have given to horses that had worms

WOUNDS.

the strongest preparation of that mineral, viz., emetic tartar, without any useful effect.

I have lately been favoured with the following communication:—"For many years my attention having been drawn to the subject of worms in horses, I at length determined to try the oil of turpentine. The first time I tried it was on a horse that could not be got into condition, though the digestive organs appeared to be in good order, and he had no appearance of any disease. The turpentine brought away an immense quantity of worms, and at last one which measured eleven inches and a half after it was dead and shrunk. Every time the turpentine was tried it had the same effect, where there were any worms. I have directed the farriers in this town to try it, and they say it brings off more worms than they ever saw from physic. The turpentine seems to act in a specific manner upon worms and insects of every description. The manner in which I give it is this:—the horse is first to take a mild laxative, so as to move the bowels very gently. When the bowels are moved by the laxative, four ounces of oil of turpentine are to be given in a pint of gruel. The horse is to have but little food, either before or after, but a small quantity of lukewarm water is to be given frequently. Even botts are expelled by means of turpentine." See *Botts*.

WOUNDS. Mr. Blaine very properly observes, that the principal difference in the treatment of wounds of the horse from those of the human body is in the mechanical part. The treatment of wounds must depend, in a great measure, upon the circumstances of the case, or the manner in which they were inflicted. Wounds may be divided into three kinds, viz. the Simple Incised Wound, made by a clean cutting instrument; the Lacerated and Bruised Wound; and the Punctured Wound. The treatment of wounds must depend also upon the structure of the part; thus the wound of a joint, or sheath of a tendon, requires a different treatment from a wound of the skin or flesh. In the latter kind, nature is often sufficient to repair the injury; but in the former,

WOUNDS.

the most violent effects often ensue. Before a wound is dressed it should be carefully cleansed : if it has been made with a clean cutting instrument, without any laceration or bruising, the divided parts should be brought together and secured by suture (stitches). In wounds of the human body, this is generally done by means of sticking-plaster ; and in some cases the same means may be found effectual in the horse, particularly when the situation of the wound is such as to admit of the application of a bandage, which materially assists in keeping the divided parts together ; most commonly, however, the suture is the only method by which this can be accomplished. In the human body, wounds are often healed in this way without inflammation or the formation of matter ; but it seldom happens so in the horse, from the difficulty of keeping the parts at rest, and from their wounds being generally accompanied with so much laceration or bruising, as to render such an easy union impracticable. It is very generally supposed by those who are unacquainted with the principles of surgery, that certain salves or balsams have the wonderful property of healing wounds in a short time, and that some preparations, such as the Riga balsam, possess this quality in a superior degree to others. Very little observation, however, is sufficient to convince any one, that all animals are endowed with the power of repairing injuries of this kind, and of reproducing, in a certain degree, parts that may be destroyed. This is well exemplified in the operation of nicking, in which several deep incisions are made in the under part of the tail, and the muscle which protrudes is drawn out with a hook and cut off, leaving large gaping wounds ; the tail is then kept in an erect or elevated position, and in about three weeks, without any kind of dressing being applied, these wounds, so formidable in appearance, will be completely filled up with new parts, and covered with skin. This power of reparation is more perfect in brutes than in man, and in some animals exists in so high a degree, as to be equal to the regeneration of an amputated part : the crab and the lizard afford an example of this. All wounds are attended with more or less inflammation.

WOUNDS.

In small and superficial wounds this is so trifling as to be scarcely worth noticing, and the efforts of nature will be quite sufficient to repair the injury; but in deep and extensive wounds, and especially when tendons or ligaments have been injured, a dangerous degree of inflammation and symptomatic fever are often produced. In such cases, bleeding and opening medicine are highly necessary, and the only application to the wound should be an anodyne fomentation, until the inflammation and fever have subsided, and the wound discharge white, healthy-looking matter, free from any offensive smell. At this period it is often necessary to inject some stimulating fluid into the wound, such as the solution of white or blue vitriol, or diluted spirit; this will expedite the healing process. When a horse is staked in leaping over hedges, or otherwise receives a deep wound, the usual practice of farriers is to cram into the cavity what is termed a Tent, that is, a wad of tow dipped in some stimulating ointment; this often produces a dangerous degree of inflammation, and is sure to retard the healing of the wound. In such accidents, the first thing to be done is to remove any splinters, or other foreign matter, that may remain in the wound, and then, if it is only a muscular injury, it will gradually heal. Fomentations alone should be employed, until inflammation has in a great measure subsided. In deep wounds it must be sufficiently obvious, that it is not proper to sew them up, as it would prevent the free discharge of matter; if the situation of the wound, however, will admit of it, a bandage may be useful, if so applied as to allow the matter to escape freely. When a bone is injured, the cure is often very tedious, and it frequently happens in such cases that the muscular parts and skin are healed, while the disease in the bone is still going on: an abscess will then form over the diseased bone, which, if not opened, will burst, and leave a cavity as large as the original wound. When the injury of the bone is confined to a small space, the wound generally does not completely heal up, but there remains a small narrow opening, nearly closed with flabby fungous flesh, from which a small quantity of offensive matter is discharged.

WOUNDS.

This opening, perhaps, will be just sufficient to admit a probe, which may be passed directly down upon the bare bone. The only method by which such a wound can be healed, is to open the sinus freely, and expose the diseased bone, the carious surface of which is to be scraped off with a drawing knife, or any convenient instrument: after this has been done, the wound will soon heal completely, by syringing it now and then with tincture of myrrh, or solution of white vitriol, of moderate strength.

Wounds of joints, particularly the large ones, are generally attended with the most serious inflammation and symptomatic fever; and the animal appears to suffer the most excruciating pain. When a joint has been opened, it may be known by synovia or joint oil, which is a yellowish, transparent, slippery fluid, flowing from the wound. The first thing to be done in this case is to close the opening in the joint as quickly as possible; and as these wounds are generally small and of the punctured kind, inflicted either by a sharp stable-fork or a thorn, the object is most readily accomplished by applying the actual cautery. The following is the method recommended by Mr. Coleman, in the first volume of the *Veterinary Transactions*. "When a joint, or mucous capsule, or the sheath of a tendon, is opened, the first application necessary is the actual cautery. The instrument most proper for the purpose is made of iron, with a wooden handle, is two feet in length, rounded at the extremity, and about the size of a small button. The temperature of the iron should be moderately red: if it be black, the heat will not be sufficient to produce a proper discharge of lymph to close up the wound; and if white (at a white heat), it will destroy too much of the surrounding parts, and perhaps do mischief to the (capsular) ligament. (See *Ligament and Joint*.) Although the operation in itself is very simple, yet some knowledge of the structure and economy of the parts is necessary, for the purpose of applying the cautery with the best possible effect. The object in view is to produce a glutinous substance to close up the cavity; and before the slough is removed,

WOUNDS.

for the granulations below to supply the place of the lymph: but if the ligament itself be destroyed by the cautery, it must, like other dead parts, separate from the living and come away, and then the joint will still be opened. It is therefore of importance not to destroy the ligaments of joints with the hot iron, but confine its application to the external soft parts. In these cases it is generally proper to cauterize the whole external surface of the wound; and if the discharge is not immediately stopped, the iron, perhaps, has not been applied sufficiently deep, or too cold to produce a proper discharge of lymph. Where it is possible to effect a cure, the actual cautery will frequently close the cavity and stop the discharge: sometimes, however, in the course of one, two, or three days, the discharge appears again by the sides of the lymph, and then the same operation should be repeated." In some instances Mr. Coleman has had occasion to apply the cautery five or six times, and nevertheless has ultimately succeeded. This gentleman also recommends the same treatment for penetrating wounds into the chest and abdomen, and for the inflammation of the neck vein, which sometimes happens in consequence of careless bleeding. In this case the neck becomes tender and swollen the day after the bleeding; and about the second or third day, it sometimes happens that blood again issues from the wound. Mr. Coleman observes, "that the application of the cautery is the most effectual method of stopping the hæmorrhage; but if this fail, and the part is too much swollen to admit of being pinned up, there is no other remedy than to take up (tie) the vein by a ligature above the diseased part: and there may be instances where it is advisable to tie up the vein below also: in general, however, the actual cautery will prevent the necessity of tying the vein:" but he observes further, "If that part of the vein which is tied be thickened and inflamed, the disease will spread upward, and much mischief will be done. I have met with a great number of sore necks, caused by the clumsy bleeding of inexperienced persons; but in one only it appeared necessary to apply the actual cautery, in order to stop the

WOUNDS.

hæmorrhage ; in which it completely succeeded." Cases of this description are seldom brought to the veterinary surgeon until they have existed for some time, and have baffled the skill of the blacksmith ; and then we generally find that the vein is lost, as it is termed ; that is, it is obliterated or plugged up above the opening in the neck, by an effusion of coagulable lymph within the vein. In this case it is to be treated as a sinuous ulcer, requiring stimulating or escharotic liquids to be injected ; but in many instances I have found a cautious use of the knife the most expeditious remedy : at all events, it is an essential part of the treatment to make a depending opening for the matter to run off freely. Great inconvenience sometimes arises from an obliteration of the neck vein, even after the wound is completely healed ; for, as one of the principal channels is destroyed, by which the blood is returned from the head to the heart, inflammation and swelling generally take place in the gland (parotid) which extends from beneath the ear to the division of the neck vein ; and this more certainly happens when the horse is turned to grass, or suffered to feed from the ground. Punctured wounds of the foot often occur, and are sometimes of a very serious nature : they may arise from a nail, or sharp piece of flint, or glass, in travelling, or from the nail being driven into the sensible parts in shoeing, in which case a horse is said to be pricked. (See *Pricking*.) It will be seen from the perpendicular section of the foot and pastern bones represented in vol. i. of my *Farriery*, that the frog projects considerably behind the tendon or sinew, as it passes over the nut bone to be fixed into the bottom of the coffin bone : a wound, therefore, in the back part of the frog, especially if the nail has passed obliquely backward, is of far less importance than when it has entered more towards the toe of the frog, and in a perpendicular direction : in this case the tendon is generally injured, and not unfrequently penetrated by the nail, and the coffin joint laid open. Accidents of the latter kind often leave an incurable lameness, and in some instances have proved fatal. Horses with flat thin soles have their feet sometimes wounded with sharp

WOUNDS.

flint or glass : the frog also is liable to a similar injury. Such accidents are seldom of a very serious nature, though causing for a time severe lameness. In all deeply punctured wounds of the foot, whether they happen in the frog or in the sole, the surrounding horn, or even the whole of the bottom of the foot, should be pared very thin, and the foot be wrapped up in a bran poultice. In slight cases, where neither the tendon nor coffin joint is affected, I have often found it sufficient to pare away the horn through which the nail entered, and pour into it a little tincture of benzoin or myrrh ; but when the tendon has been injured, or the coffin joint penetrated, after making the bottom of the foot very thin by means of a drawing knife, a poultice only should be applied ; and if the pain and inflammation which follow are so considerable as to quicken the pulse and cause symptomatic fever, bleeding, opening medicines, and a diet of bran mash, are also necessary.

In wounds of the coffin joint, the actual cautery is certainly a very improper application : in such cases the tendon is generally lacerated, and the nut bone often bruised, so that sloughing or exfoliation of these parts may reasonably be expected : the opening in the horny covering should therefore be preserved, or perhaps enlarged, that any matter which forms, or parts of the tendon or bone which separate, may pass freely off. When the pain and inflammation have in a great measure subsided, compound tincture of benzoin or myrrh may be poured in ; which, by its stimulating quality, may bring on healthy action in the diseased parts, and thereby expedite the cure : a very common termination, however, of this accident, is a stiff coffin joint, and a certain degree of incurable lameness.

In wounds of the bottom of the foot, the horny covering often separates from the sensible parts, in consequence of the matter which is formed being interposed between them ; and there being no vent for it through the horn, the matter sometimes spreads all over the bottom of the foot : in such cases the separated horn should be removed, and the sensible parts dressed with a solution of white vitriol of moderate strength, or with

WOUNDS.

the compound tincture of benzoin, and afterwards covered with digestive ointment spread on tow. For the treatment of wounds on the coronet or heel, see *Overreach* and *Treads*.

Wounds from thorns often occur both in horses and dogs: the first thing to be done is to extract carefully every part of the substance which inflicted the wound; afterwards fomentation and poultice are proper; but if these do not afford relief in a few days or a week, let a blister be applied. It has been asserted that a plaster of common pitch is effectual in such cases.

Wounds of the abdomen or belly are sometimes inflicted by the horns of cattle, or by sharp pieces of wood in going over hedges; and when the abdomen is penetrated, some part of the bowels generally comes out through the opening. When this happens, the animal is to be thrown down and put on his back, in which position the bowel may be easily replaced: the wound is then to be stitched up, and afterwards a wide roller is to be applied with a pledget of tow over the wounded part. Such cases are often cured when seasonably attended to and properly treated; but when the bowel is suffered to remain out of the body for some time, or if it be washed with strong stimulating liquids, a common practice with farriers, the animal generally dies. When the bowel as well as the abdomen is opened, the case is highly dangerous; and the only thing to be done is to put one or two stitches in the bowel, and confine it to the opening in the abdomen, leaving the ends of the threads hanging from the wounds. Should the intestine not unite, an artificial anus will be the consequence.

Wounds in the intestines are generally considered mortal, and so indeed they almost uniformly prove to be, either from unskilful treatment, or from the laceration and contusion with which they are accompanied. But we learn from the experiments of Mr. Benjamin Travers, that the intestines possess a power of repairing injuries, like other parts of the body, which is proved by the following experiment, and others of the same kind. An incision one inch and a half in length was made in the bowel of a dog; the wound of the integuments was closed

WOUNDS.

by suture (stitches): the animal was scarcely affected by the operation, took food as usual, and had natural evacuations. At the end of a fortnight, when perfectly recovered, he was killed for the purpose of examining the bowel, when the wound appeared to be completely healed. In the eighteenth vol. of the *Philosophical Transactions*, a similar experiment is related by Mr. W. Cooper: "An opening was made in the abdomen of a large dog, whence the small guts were extended: after an incision made in one of them according to its length, they were put back, and the wound in the abdomen stitched up, &c.: the dog recovered without any ill symptoms, and became perfectly well in a few days after." "The like experiment," he adds, "I have since made upon another dog, which in like manner recovered without the application of any medicine." It should be observed, that the bowel does not appear to have been stitched up when returned into the belly. The following experiment, by Mr. Travers, is still more remarkable: "A ligature of thin packthread was firmly tied round the duodenum (first intestine) of a dog, so as completely to obstruct it; the ends of the string were cut off, and the parts returned; the wound in the abdomen was closed, and the animal expressed no sign of suffering when the operation was concluded. On the following day he was frequently sick, and vomited some milk that had been given him: his respiration was hurried. Third day, his sickness continued, and he vomited some bilious fluid. Fifth day, he passed a copious stool of the same appearance as the fluid discharged by vomiting: his sickness from this time ceased, and his breathing was natural; he took bread and milk, and drank abundantly of water. Seventh day, he had three similar evacuations, and appeared well, eating animal food freely. Tenth day, he had a solid natural stool of a dark colour. On the fifteenth day, his cure being established, he was killed for the purpose of examining the gut. The ligature which was fastened round the intestine divided the interior coats of the gut, in this respect resembling the operation of a ligature upon an artery: the peritoneal or outer coat alone maintained its inte-

WOUNDS.

grity. The inflammation which the ligature induces on either side of it is terminated by the deposition of a coat of lymph, exterior to the ligature: this quickly becomes organized, and the ligature, thus enclosed, is liberated by the ulcerative process, falls of necessity into the canal, and passes off by stool." See *An Inquiry into the Process of Nature in repairing Injuries of the Intestines*, by Benjamin Travers.

In wounds of arteries, the first object in view is to put a stop to the hæmorrhage or bleeding, and this may generally be accomplished by placing a bolster of soft linen or lint on the wound, and binding it firmly on with a linen roller: when the situation of the bleeding vessel will not admit of this being done, it is necessary to enlarge the wound in the integuments, so as to get at the bleeding vessel, which is to be firmly tied, both above and below the wound, with strong packthread. The portion between the ligatures is then to be divided. When an artery is cut completely through, the divided ends retract or shrink within the cellular membrane, so as to leave a considerable space between them: the bleeding in this case generally stops in a short time, and if this does not happen, it is easily accomplished by pressure: when the bleeding has been stopped, the injury is to be treated as a common wound. The blood which flows from a wounded artery is of a bright scarlet colour, and very different from that which comes from a vein: it is thrown out, too, with considerable force, and by jerks.

When a considerable nerve is wounded, the most distressing symptoms, and even locked jaw and death, are often the consequence. The partial division of a nerve is a more dangerous accident than if it were completely divided. On the sides of the fetlock joint, rather towards the back part, the nerve and artery which supply the foot are much exposed to injury; and when locked jaw or other alarming symptoms take place after this part has been wounded, there is reason to suspect that the nerve has been partially divided: it is advisable, therefore, in such cases, to dissect carefully, so as to expose the nerve, and make a complete division of it. There is another pair of nerves that are liable to be

WRE—YEL

wounded by unskilful bleeding: they are named *par vagum*, and are the eighth pair which proceed from the brain: they pass down on each side the windpipe, close to a large artery termed the Carotid Artery, and under the jugular or neck vein. At the upper part of the neck, where horses are usually, and ought always to be bled, that is, within three or four inches of the part where the vein forks off or divides, there is a considerable space between the vein and the nerve and artery: but in the middle of the neck, and lower down, they are much closer to each other; and when a horse is bled in this situation, with a deep fleam, struck in with violence, and by a heavy blood-stick, or by a thrust with a small sharp lancet, both artery and nerve are liable to be wounded: a wound of this nerve is, I believe, always fatal.

WRENCH. See *Strain*.

Y.

YARD, FALLEN. See *Falling of the Yard*.

YARD, FOUL. The horse's penis sometimes requires to be washed with soap and water, in order to free it from an excess of that mucous matter which is naturally formed on the part. The necessity, however, for this operation, seldom happens.

YARD, MATTERING OF. See *Blennorrhœa*.

YELLOWs. This disease is indicated by a yellowness, approaching sometimes to an orange colour, of the membrane which lines the eyelids (*conjunctiva*, see *Eye*), and the inner parts of the lips and mouth. There is generally a quick pulse, great languor in the animal's appearance, want of appetite, and considerable weakness: the urine is high-coloured, and the dung generally in small knobs, and of a slimy appearance. Notwithstanding the animal's weakness, he should be bled freely: a laxative clyster is then to be thrown up, and a dose of laxative medicine given. By this treatment he is generally much relieved, looks more lively, and begins to feed again, and is gradually restored to health by attentive grooming, a light nutritious diet, such as oatmeal gruel, malt mash, &c.: in summer green food is proper. In some cases it

YEW—ZIN

is necessary to bleed a second time; and if the dung continues hard, it is proper to repeat the laxative ball: sufficient time, however, should be allowed for the first laxative dose to operate, and the effect of the laxative clysters should be tried before the second dose is given. When the horse looks lively, feeds well, and the pulse has become regular, the following tonic ball, given daily, may assist in the recovery of his strength:

TONIC BALL.

Salt of steel (sulphate of iron), two drams.

Carbonate of potash, two drams.

Cascarilla bark, two drams.

Powdered caraways, half an ounce.

Syrup or treacle, enough to form a ball.

Other formulæ for tonics may be seen in the veterinary *Materia Medica*, or the 2d vol. of the author's *Veterinary Medicine*.

YEW. The leaves of this tree are said to be poisonous to several quadrupeds: I found five ounces sufficient to destroy an ass in about half an hour.

Z.

ZEDOARY. This root is similar to turmeric in its medical properties: it has been recommended in jaundice, and may perhaps be an useful addition to tonic medicines in such cases, after the necessary evacuations have taken place.

ZINC. This metal affords some useful medicinal preparations, which are the sulphate of zinc (formerly named Vitriolated Zinc and White Vitriol), white oxide of zinc (formerly flowers of zinc), and acetate of zinc. These preparations are employed internally as tonics, and externally as astringents. The acetate, however, has rarely been prescribed for the former purpose, and the white oxide as seldom for the latter. The cases in which these preparations are useful have been noticed in describing those diseases which are benefited by them.

EXPLANATION OF FRONTISPIECE,

Which exhibits a View of the Skeleton.

For this plate we are indebted to Mr. Stubbs's very accurate and elegant delineation of the subject. It is impossible to give a particular description of the skeleton without exhibiting the subject in a variety of positions, which would require several plates, and render the work expensive: I shall therefore confine my description to the most striking and important parts, particularly those which are often the seat of disease or lameness; and the processes or projecting parts, which serve as levers or pulleys to the muscles, thereby affording them a considerable mechanical advantage. Such readers as wish for a more particular description are referred to *Stubbs's Anatomy of the Horse*, a work that is, I believe, very scarce and expensive.

THE HEAD.

1. A hole through which pass a nerve and an artery.
2 2 2 2. The four crooked lines here delineated are considered anatomically as divisions between the bones of the face, and are named Sutures. In very young subjects they are very distinct, and by soaking the head of a foetus or very young colt, the bones which they divide may be easily separated from each other. 4. The orbit or socket of the eye. 5. The cavity above the orbit, in which appears the coronal process or a projecting part of the under jaw-bone. 7. The bone which divides the above cavities, and is sometimes fractured by a horse falling on his head. 3. The angle of the under jaw bone, where the artery passes, by which the pulse is generally felt. 6. A protuberance in the occipital bone or

EXPLANATION OF FRONTISPIECE.

back part of the head, commonly termed Knoll Bone. From this part the great ligament of the neck arises, which, passing down over the bones of the neck, is fixed into the bones of the withers.

BONES OR VERTEBRÆ OF THE NECK.

There are seven vertebræ in the horse's neck ; a, the first or atlas ; b, the second or dentata. These vertebræ are very different from the others, being capable of considerable motion ; the first with the head, and the second with the first. In consequence of this, they are much more liable to dislocation than the other vertebræ, and it is this injury which is commonly termed a Broken Neck. In such accidents the animal is instantly destroyed by the compression which the spinal marrow receives. A considerable space may be observed between the first and second vertebra, which is not the case with the others. This space, marked a, is protected or covered only by the cervical ligament, a thin slip of muscle and skin ; it is easily penetrated. Butchers are, therefore, enabled to destroy animals by plunging a sharp knife into it ; and, as a wound in this part of the spinal marrow is almost instantly fatal, it has been considered a better method than the common one of knocking them on the head. Under the head *Poll-evil*, it has been observed that the atlas, and under surface of the cervical ligament, are in that disease generally injured, and the cause of their being affected is there pointed out. The dentata is considerably larger than the atlas, and differs from it in form. The other five cervical vertebræ differ but little from each other, and are very firmly and closely united ; they are marked c, d, e, f, g. The dorsal vertebræ, or bones of the back, are eighteen in number. The bodies of these vertebræ are much smaller than those of the neck, and have large upright processes or spines, which in the withers are remarkably high. In fistula of the withers these spinous processes are often diseased. The first dorsal vertebra, marked 1, is lower and of a different shape from the rest ; and from this to 11, the height of the spinous processes may be ob-

EXPLANATION OF FRONTISPIECE.

served to vary; from this to 18 there is but little difference. Next to these, from 18 to 24, are the lumbar vertebræ or bones of the loins. 25. The five vertebræ which form the sacrum; these, at an early age, are formed into one bone. 26 is the coccyx, or bones of the tail, which are about seventeen or eighteen in number. Having described the vertebræ of the neck and spine, it is proper to observe that they are so constructed and united, as to form a secure canal for the passage of the spinal marrow, which, in its course, sends off nerves to different parts of the body. It is unnecessary to give a particular description of the ribs: there are eighteen on each side; the first is marked a, the last r. The sternum or breast-bone is partly composed of cartilage or gristle. 1 1 1 1, or the fore part, is cartilaginous; 2 2 2 2 2 is bony. The first nine ribs articulate, that is, are joined to the sternum, and are thence named True Ribs; the other nine are united at the lower part with each other and to the first nine by cartilage, and are termed False Ribs. Fig. 2 represents the upper and wide part of the scapula or shoulder blade, and 3 its spinous process or ridge: at its lower part 4, is a projecting process, from which a powerful muscle arises. 5. The head of the humerus or shoulder-bone, which being inserted in the socket of the shoulder-blade, forms the shoulder-joint. 6. A protuberance at the head of the humerus, in the fore part of which are two grooves. It is this protuberance which forms the projecting part of the horse's shoulder. 7. The curved process of the humerus. 8. The lower part of the humerus, where it articulates with the radius, forming the next joint of the fore limb. It should be observed, that the scapula and humerus are so placed as to form an acute angle at the shoulder-joint, which is admirably adapted to facilitate the motion of the animal; and it will generally be found that the more oblique or slanting the position of the shoulder blade is, and consequently the more acute this angle, the more extensive will be the action of the fore leg. 9, which in the plate is placed thus ∞, is the olecranon or elbow; this projection affords a great advantage to the muscles which bring back the fore leg after it

EXPLANATION OF FRONTISPIECE.

has been extended or advanced. 10. The radius, which forms the upper part of the horse's fore leg. 11. The knee-joint, which is composed of seven bones. 12. The seventh bone of the knee, which projects considerably, thereby forming a favourable attachment for some of the muscles of the fore arm, and by its curved form serves to protect the nerves, blood-vessels, &c. in their passage to the lower parts of the limb. 13. The upper part of the outer small splent-bone. 13 13. The small splent-bones, the usual seat of the disease termed Splents. 14. The cannon or shank-bone. 15 15. The fetlock joints. 16. The sesamoid bones, of which there are two in each leg. The flexor tendon, or back sinew, passes over these bones, which are covered with a slippery cartilage to render the motion of the tendon easy; and by projecting beyond the fetlock joint, they serve as a lever to the flexor muscles, that is, the muscles which bend the pastern and foot. 17. The large pastern. 18. 18. The front and back part of the small pastern. 19. The navicula or nut bone. 20. The coffin-bone.

BONES OF THE HIP AND HIND LEG.

a. a. a. b. b. The left side of the bones of the pelvis or basin-bone, which, indeed, consists only of one large, rather circular bone, with several projecting parts. b b. The upper part or spine. a a. The lower parts. The first a represents the part where the bone is sometimes fractured; when this happens, a horse is said to have his hip knocked down. c. The outside of the left hip joint. e. A projecting part, named Ischium or hitch-bone. f. The femur or thigh bone. d. A considerable protuberance at its upper extremity, from which a powerful muscle arises. g g. The right and left patella or kneepan. h. The stifle joint. Within this joint are slippery cartilages, named from their form Semilunar; these cartilages give great facility to the motion of the stifle joint. These joints are secured by peculiar ligaments named Crucial, from their shape. It must be obvious that the patella, from its form and situation, affords great advantage to the muscles of the thigh. i i. The

EXPLANATION OF FRONTISPIECE.

right and left tibia, which in the horse is generally considered as the thigh-bone. k. A small bone named Fibula. l. The os calcis, calcaneum, or hock-bone. This is a very important part, forming one of the most considerable levers in the skeleton. m. Another large bone of the hock joint, formed somewhat like a pulley. The motion of the joint depends principally upon this bone, which is named Astragalus. n, n, n. The outside and inside of the small bones of the hock joint. The inside n. shows the seat of bone spavin, and higher n. of the same leg points out the seat of bog spavin. o. The hind shank or cannon-bone. p. The outer splent-bone. r. The fetlock joint. q. The sesamoid bones. s. t. The large and small pastern-bones. u. The coffin-bone.

THE END.

LONDON:

PRINTED BY THOMAS DAVISON, WHITEFRIARS.

BY THE AUTHOR OF THIS WORK.

THE FIFTEENTH EDITION.

Illustrated by Twenty-three Plates. 12mo. Price 8s.

A COMPENDIUM OF THE VETERINARY ART, containing Plain and Concise Rules for the Treatment of all the Disorders and Accidents to which the Horse is liable; with Observations on Grooming, Feeding, Exercise, and the Construction of Stables. Also, a brief Description of the Structure, Economy, and Diseases of the Horse's Foot; with the Principles and Practice of Shoeing.

Being the First Volume of Mr. White's Treatise on Veterinary Medicine.

ALSO,

Vol. II. Containing the Materia Medica, and Pharmacopœia. Fifth Edition. Price 6s.

Vol. III. Containing Observations on the Structure, Economy, and Diseases of the Digestive Organs of the Horse, and other Diseases resulting from them; with Practical Observations on the Treatment and Prevention of Lameness. Seventh Edition. Price 6s.

Vol. IV. A COMPENDIUM OF CATTLE MEDICINE; or, Practical Observations on the Disorders of Cattle and other domestic Animals, except the Horse; with a Series of Essays on the Structure, Economy, and Diseases of Horned Cattle and Sheep, as communicated to the Bath and West of England Society. Fifth Edition. Price 6s.

ALSO PUBLISHED BY BALDWIN AND CRADOCK,

A New Edition, in a large Volume, Octavo ;

With all the Improvements in the Tilling of Land, the Breeding and Fattening of Stock, the Irrigation of Meadows, the Preparation and Application of Manures, &c. added,

PRICE 17s. IN BOARDS,

THE
COMPLETE GRAZIER;
OR
FARMER'S AND CATTLE-BREEDER'S AND
DEALER'S ASSISTANT.

COMPRISING

Instructions for the Buying, Breeding, Rearing, and Fattening of Cattle; and the Stable Management of Horses.

Directions for the Choice of the best Breeds of Live Stock.

The Treatment of their Diseases, and the Management of Cows and Ewes during the critical Times of Calving and Yeaning.

The general Economy of a Grass Farm.

The Irrigation of Meadows, and the Preparation and Application of Manures.

The Culture, and Comparisons of the relative Value, of the best Natural and Artificial Grasses and Plants for Fodder.

Various Methods of cutting, mixing, and preparing Food in severe Winters and Seasons of Scarcity.

The Economy and general Management of the Dairy; including the Making, Curing, and Preservation of Butter and Cheese; with the most approved Methods of feeding Pigs.

TOGETHER

With an Introductory View of the Different Breeds of Neat Cattle, Sheep, Horses, and Swine; the present State of the Wool Trade, and the Improvement of British Wool.

ALSO,
AN APPENDIX,
ON

PRIZE CATTLE, FARM ACCOUNTS, AND OTHER SUBJECTS
CONNECTED WITH AGRICULTURE.

BY A LINCOLNSHIRE GRAZIER;
ASSISTED BY COMMUNICATIONS FROM SEVERAL YORKSHIRE, LEICESTER,
AND NORFOLK FARMERS.

FIFTH EDITION,
Revised, Corrected, Enlarged, and greatly Improved.

ILLUSTRATED BY NUMEROUS ENGRAVINGS.

LIBRARY OF USEFUL KNOWLEDGE.

PROSPECTUS

OF THE

FARMER'S SERIES;

TO BE PUBLISHED IN MONTHLY NUMBERS, SIXPENCE EACH.

It is proposed to publish a series of treatises on the different subjects connected with Domestic and Rural Economy. The design is, to afford to the Farmer, the Cottager, and the Labourer, all the information necessary for well understanding the history, nature, and management of the different domestic animals and their productions: to give an account of the nature and properties of all trees, plants, and vegetables, usually cultivated for food or profit; and to explain the operations of agriculture in all its branches, with the principles upon which they depend, and the branches of general knowledge with which they are connected. Persons who live in the country, and are employed in husbandry, have, during the long winter evenings, and when the weather prevents the carrying on out-door work, much time which might be employed in acquiring knowledge respecting those things which are most important to their welfare and support. It is, nevertheless, to be regretted, that hitherto, less pains have been taken to afford useful information to the Husbandman, on subjects connected with his pursuits, than have been bestowed on furnishing information to manufacturers and artisans: and it may be added, that less desire for acquiring knowledge has been evinced in the agricultural districts than in towns. Much of the spare time of the husbandman has been wasted in utter idleness, or spent in the perusal of books calculated to hurt rather than benefit the mind; and to keep alive old prejudices and idle superstitions. It is hoped that the present work will in a great measure remedy this evil, and lead to the cultivation of general knowledge amongst the agricultural classes, so that they may, before long, be brought on a level with the artisans and manufacturers; who, by living in towns, have had better opportunities both of acquiring and communicating information on all subjects connected with their employ-

Litrary of Useful Knowledge—Farmer's Series.

ments, their interests, and their happiness. Those who can be once tempted to acquire knowledge, will speedily be repaid both in pleasure and profit. That profit must be derived from well understanding the nature and principles of our daily pursuits, must be obvious to all; and it would be a waste of time to reckon up the advantages of knowledge over ignorance and prejudice.

The first division of the Series will contain a history of the treatment and management of such animals as are useful to man; to this will be added an account of those animals which are injurious to him. In treating of the domestic animals, it will become necessary, in order to show how they may be best preserved in a healthy and useful state, to dwell upon their history, structure, food, habit, and diseases; and on these points the treatises will be full and minute; the information will be conveyed in a plain and familiar manner, not only showing what is best to be done, but expounding the reasons for that which is directed. In order to acquire the knowledge of the utility of animals, both in increasing the power of man by their strength, and in supplying raiment and food, it will be requisite to enter into many points in natural history; and, in considering the best modes of applying the strength of animals, some insight into Mechanical Science will be necessary. Again, with respect to articles of food and raiment, such as cheese, butter, wool, some of the leading principles of Chemistry will be explained. In order to add to the entertainment of the reader, and for the purpose of exciting curiosity and keeping up attention (more particularly among those who have hitherto read books of amusement merely), it is intended occasionally to introduce curious facts and anecdotes connected with the subjects under discussion; and drawings of animals, implements, buildings, &c. will be added for the purpose of illustration.

The following general sketch of the objects in view shows how useful, how varied, and how interesting they are. The information on each head will be ample; but it is impossible, at present, to specify the order of the publication of the Treatises. Those which belong to the same general division will be afterwards arranged into volumes, each having its index for the ease of consultation.

GENERAL VIEW OF THE SUBJECTS.

I. OF THE LIVE STOCK.

1. Of the *Horse*. His varieties—as fitted for the road—for the plough—for light or for heavy soils—for hill-farms, &c.—Breeding—Food and management—Diseases—their prevention and remedies, &c.
2. Of the *Ass* and *Mules*. Advantages and disadvantages of using those animals in different situations—Breeding and general management—Diseases and remedies, &c.
3. Of *Neat Cattle*. Breeding and rearing—Varieties as best fitted for different soils—for the plough and team—for the dairy—for fattening, &c.—Diseases and remedies, &c.
4. Of *Sheep*. Breeding and rearing—Varieties as best fitted for particular soils and pastures—Sheep-shearing—Qualities of wool—Improvement of breeds—Fattening—Diseases and remedies, &c.
5. Of *Goats*. Breeding and general management—Soils and situations fitted for this kind of stock—Diseases and remedies, &c.
6. Of *Swine*. Their varieties—Breeding—Fattening—Diseases and remedies, &c.
7. Of *Rabbits*. Proper situations for Rabbit-warrens—Means of stocking them—Rearing and feeding—Their different breeds—Diseases and remedies—Nets and traps for catching—Taming of *Ferrets* for that purpose, &c.
8. Of *Pigeons*. Their varieties—Advantages and disadvantages to the farmer—Construction of Dovecots—Rearing, management, and preservation of the stock—Laws respecting, &c.
9. Of *Poultry*. Different species and varieties of each—Rearing and feeding—Management of their produce—Eggs, quills, &c.—Diseases and remedies, &c.
10. Of *Bees*. General Management—Diseases and prevention—Most profitable means of extracting their honey, &c.
11. Of *Fish*. Construction of ponds—Methods of stocking and preserving—Species most eligible for fish-ponds, &c.

* * The Animals, Birds, and Insects that are peculiarly hurtful to the Farmer, such as the *Fox*, *Polecat*, *Rat*, *Mouse*—*Kite*—*Tus-nip-fly*, *Bots*, *Weevil*, &c. will also be described, along with the best modes of extirpating or destroying them.

II. GENERAL LABOURS OF AGRICULTURE.

1. Of Farm-buildings—Granaries—Cottages—Stables—Cow-houses—Sheep-cots, &c.
2. Of Road-making—Bridge-building—Canals—Embankments—Draining—Enclosing, &c.

Library of Useful Knowledge—Farmer's Series.

3. Of Plantations—Coppices—Rearing and Cutting of Copse-wood—Felling of Timber-trees, &c.
4. Of Machinery, and other Implements, such as Thrashing-Mills—Fanners—Ploughs, &c., and the most approved modes of their construction.
5. Of the effect of different Soils and Climate on Animals and Vegetables.
6. Of the different kinds of Manure and Composts.
7. Of the Rotation of Crops as practised in the various districts of the Island, and on different kinds of Land.
8. Of Broadcast and Drill-Husbandry, with a comparison of the advantages of each.
9. Of Harvesting and preserving of Grain and other Farm-produce.
10. Of Turnip, Carrot, Cabbage, and Potato-Husbandry.
11. Of Flax-growing, and the subsequent Manipulations.
12. Of Spade-Husbandry and Gardening—Of Orchards and their management.
13. Of Dairy-farming—Cow-keeping and Grazing.
14. Of Meadows and Hay-crops—Irrigation—Paring, Burning, &c.
15. Of Natural and Artificial Grasses—the various species and comparative values.
16. Of Sheep-farming.
17. Of Hop-planting—Picking and general management.

III. DOMESTIC ECONOMY.

1. Of the *Dairy*. Chemical analysis of Milk, and best means of increasing its quantity and quality.
2. Of *Butter*. Its manufacture—The different qualities and prices which are made on the same farm.
3. Of *Cheese-making*. Various kinds made in different countries and in different districts of the same country—Parmesan—Gloucester—Cheshire—Dunlop, and other cheeses; with instructions for making each sort.
4. Of Goat-milk and Goat-cheese.
5. Of Brewing Ale, Beer, Mead, &c.
6. Of Baking and Confectionery.
7. Of Wine-making and the preservation of Fruits.
8. Of the manufacture of Cyder and Perry.
9. Of curing and preserving Bacon—Beef—Mutton, and other animal food.

Such is the general outline of this Series; of which the first three Numbers are published.—*December 31st, 1829.*



